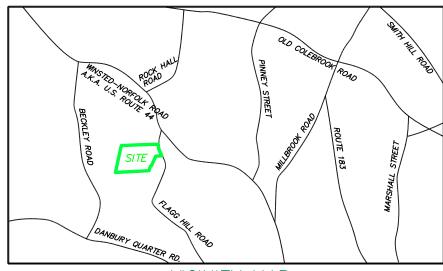
# WIND COLEBROOK SOUTH

# FLAGG HILL ROAD COLEBROOK, CONNECTICUT



#### VICINITY MAP

#### APPLICANT

BNE ENERGY, INC. 29 SOUTH MAIN STREET TOWN CENTER SUITE 200 WEST HARTFORD, CT

#### **ENGINEER**

CIVIL 1
43 SHERMAN HILL ROAD, SUITE D-101
WOODBURY, CT

#### ENVIRONMENTAL CONSULTANTS

VHB 54 TUTTLE PLACE MIDDLETOWN, CT

MICHAEL W. KLEMENS, LLC P.O. BOX 432 FALLS VILLAGE, CT

#### SURVEYOR

RIORDAN LAND SURVEYING 701 MIDDLEROAD TURNPIKE WOODBURY, CT CONNECTICUT SITING
COUNCIL SUBMISSION



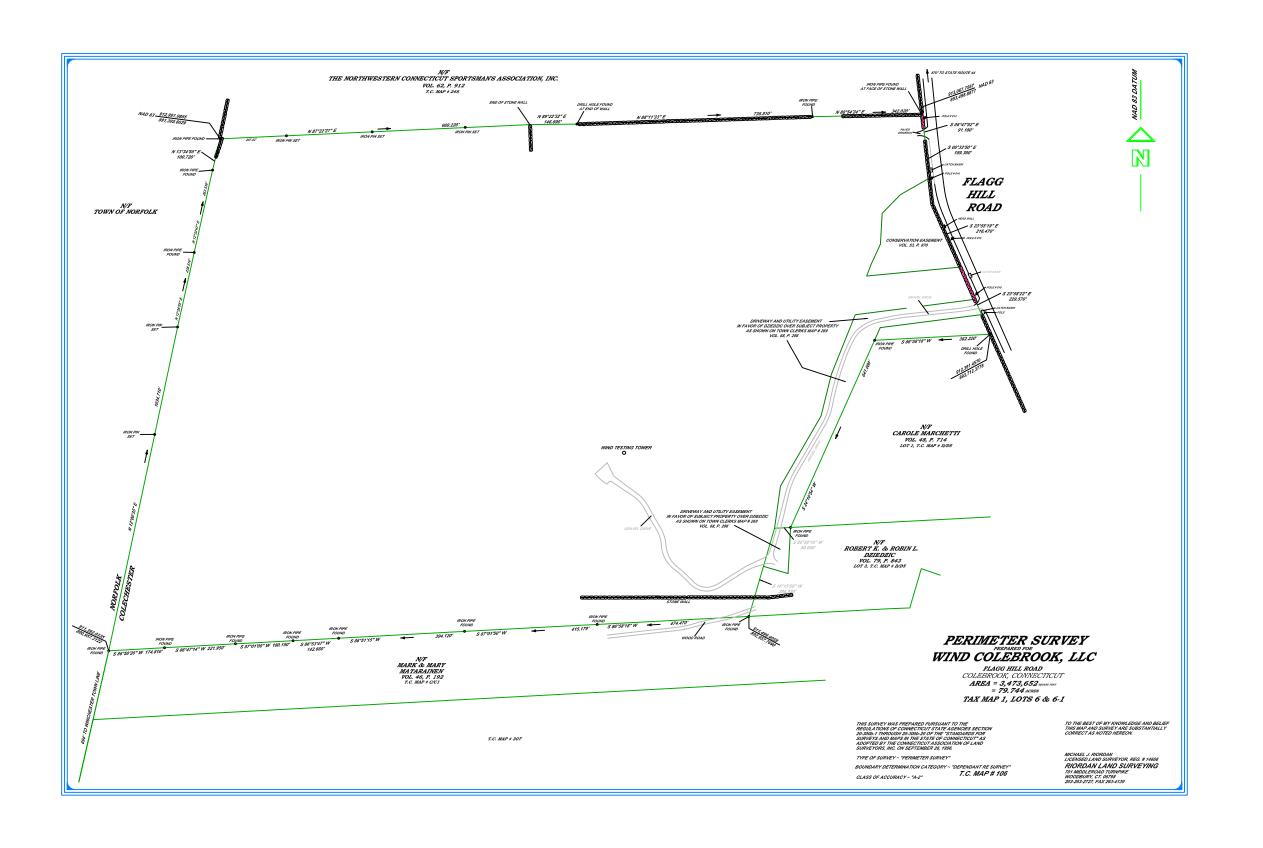
CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
WOODBURY (203) 266 - 0778 CONNECTICE

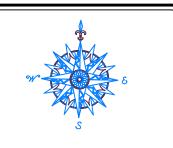
AUGUST 26, 2011 REVISED AUGUST 28, 2012

#### SHEET NUMBER

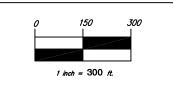
#### **DESCRIPTION**

0001	DDODEDTY CUDYEY
C001	PROPERTY SURVEY
C002	SITE PLAN WITH AERIAL IMAGERY
C003	CLEARING LIMITS PLAN & VERNAL POOL ANALYSIS
C100	OVERALL SITE PLAN
C101	TURBINE ONE SITE PLAN
C102	CRANE ASSEMBLY AREA SITE PLAN
C103	TURBINE TWO SITE PLAN
C104	TURBINE THREE SITE PLAN
C200	EROSION CONTROL PLAN
C201	EROSION CONTROL PLAN COLLECTOR YARD
C202	EROSION CONTROL PLAN MAIN ACCESS DRIVE 0+00 TO 7+50
C203	EROSION CONTROL PLAN MAIN ACCESS DRIVE 7+50 TO 17+50
C204	EROSION CONTROL PLAN TURBINE ONE AND MAIN ACCESS DRIVE 12+10 TO 18+50
C205	EROSION CONTROL PLAN CRANE ASSEMBLY AND MAIN ACCESS DRIVE 18+50 TO 23+00
C206	EROSION CONTROL PLAN TURBINE TWO AND MAIN ACCESS DRIVE 23+00 TO 31+30
C207	EROSION CONTROL PLAN TURBINE THREE AND MAIN ACCESS DRIVE 31+50 TO 37+83
C300	GRADING PLAN
C301	GRADING PLAN COLLECTOR YARD
C302	GRADING PLAN MAIN ACCESS DRIVE 0+00 TO 7+50
C303	GRADING PLAN MAIN ACCESS DRIVE 7+50 TO 17+50
C304	GRADING PLAN TURBINE ONE AND MAIN ACCESS DRIVE 12+10 TO 18+50
C305	GRADING PLAN MAIN ACCESS DRIVE 18+50 TO 23+50
C306	GRADING PLAN TURBINE TWO AND MAIN ACCESS DRIVE 23+50 TO 31+30
C307	GRADING PLAN TURBINE THREE AND MAIN ACCESS DRIVE 31+30 TO 37+83
C401	MAIN ACCESS DRIVE PLAN AND PROFILE 0+00 TO 7+00
C402	MAIN ACCESS DRIVE PLAN AND PROFILE 7+00 TO 14+00
C403	MAIN ACCESS DRIVE PLAN AND PROFILE 14+00 TO 19+00
C404	MAIN ACCESS DRIVE PLAN AND PROFILE 19+00 TO 25+00
C405	MAIN ACCESS DRIVE PLAN AND PROFILE 25+00 TO 31+00
C406	MAIN ACCESS DRIVE PLAN AND PROFILE 31+00 TO 37+83.13
C407	STORM DRAINAGE PROFILES MAIN ACCESS DRIVE
C408	STORM DRAINAGE PROFILES MAIN ACCESS DRIVE
C500	POST CONSTRUCTION GRADING PLAN
C501	POST CONSTRUCTION GRADING PLAN COLLECTOR YARD
C502	POST CONSTRUCTION GRADING PLAN MAIN ACCESS DRIVE 0+00 TO 7+50
C503	POST CONSTRUCTION GRADING PLAN MAIN ACCESS DRIVE 7+50 TO 17+50
C504	POST CONSTRUCTION GRADING PLAN TURBINE ONE AND ACCESS DRIVE 13+00 TO 18+50
C505	POST CONSTRUCTION GRADING PLAN MAIN ACCESS DRIVE 18+50 TO 23+50
C506 C507	POST CONSTRUCTION GRADING PLAN TURBINE TWO AND MAIN ACCESS DRIVE 23+50 TO 31+30 POST CONSTRUCTION GRADING PLAN TURBINE THREE AND MAIN ACCESS DRIVE 31+30 TO 37+8
C600	EROSION CONTROL NARRATIVE AND CONSTRUCTION SEQUENCE
C601	DETAILS
C602	DETAILS
C603	DETAILS
C604	DETAILS - CULTEC DETENTION BEDS
E101	ELECTRICAL SITE PLAN





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PROPERTY SURVEY

# WIND COLEBROOK SOUTH

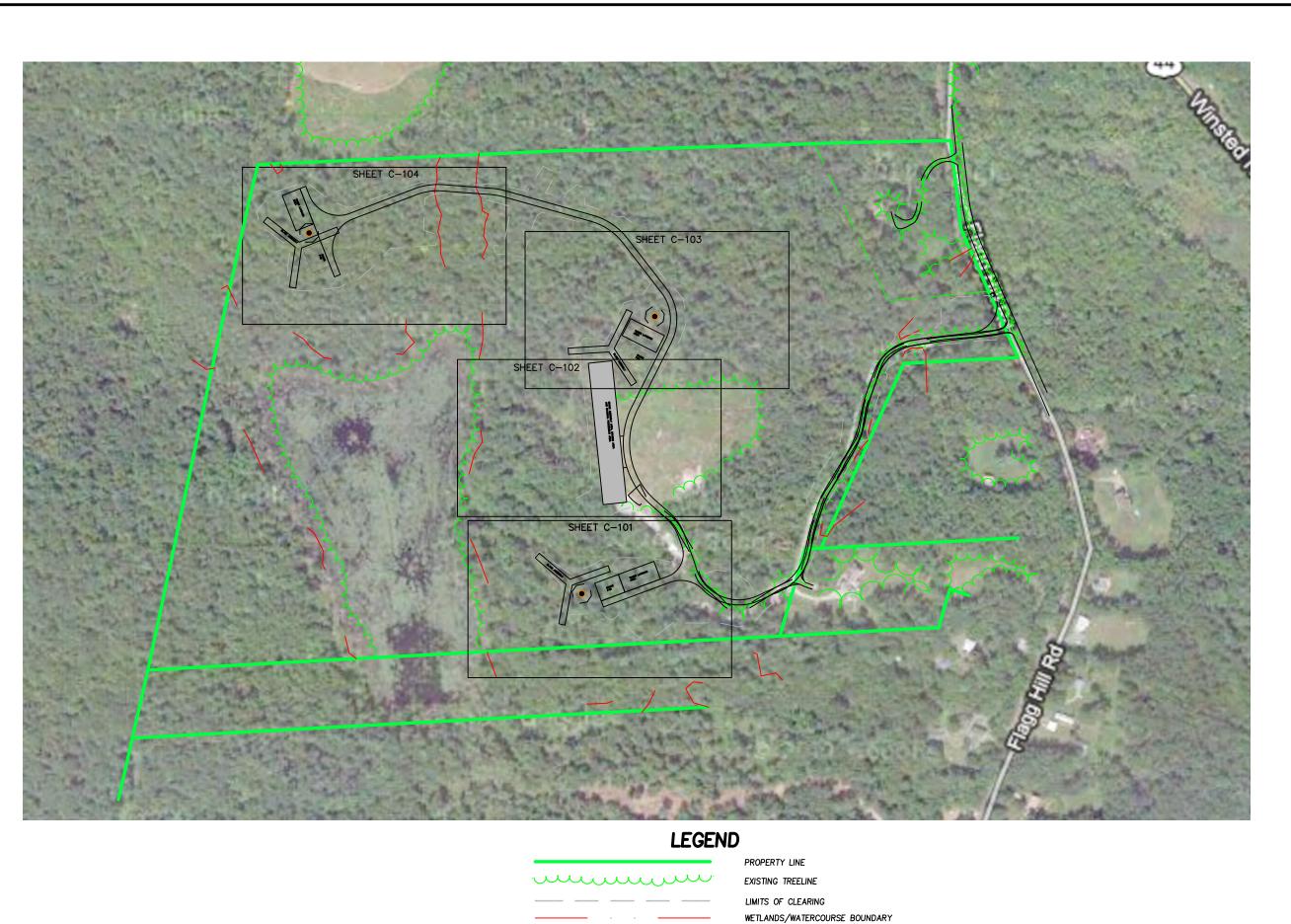
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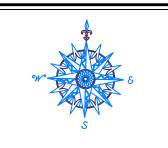


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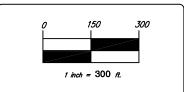


EXISTING ROADWAY

PROPOSED GRAVEL ACCESS DRIVE



NO.	REVISION	DATE
1	REVISED ROAD ALIGNMENT	29 JUN 1
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BNE ENERGY, INC. 29 SOUTH MAIN STREET **TOWN CENTER SUITE 200** WEST HARTFORD, CT 06107

> SITE PLAN WITH **AERIAL IMAGERY**

## WIND COLEBROOK SOUTH FLAGG HILL ROAD

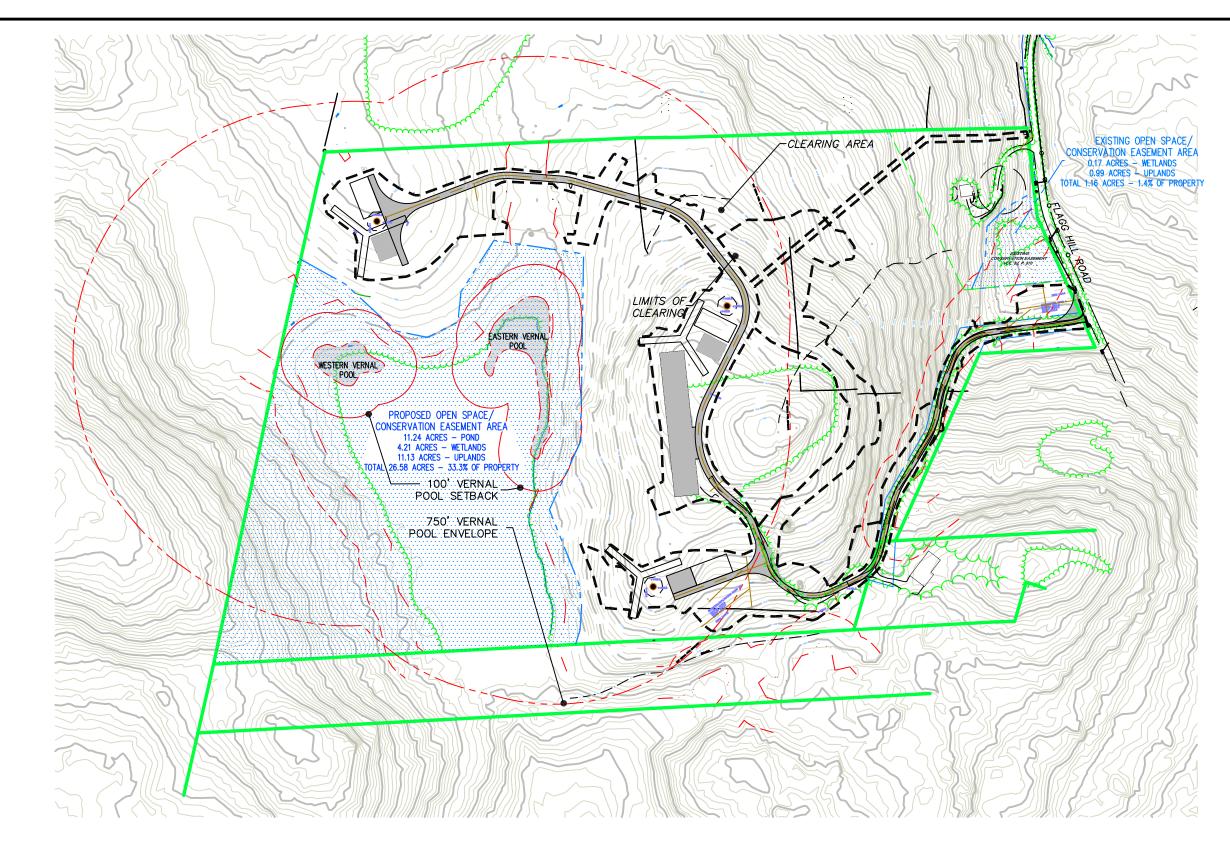
SOME 1" = 300'

MATE 26 AUG

PROJ. NO.: 3092

CAND FILE NAME 3092 26 AUG 11 3092

C002



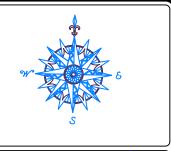
#### WESTERN VERNAL POOL

		PRE-DEVELOPMENT		POST-DEVELOPMENT	
DISTANCE	TOTAL AREA	AREA DISTURBED	% DISTURBED	AREA DISTURBED	% DISTURBED
0-100' FROM POOL	2.03 AC.	0 AC.	0	O AC.	0
100-750' FROM POOL	48.20 AC	0 AC.	0	2.96 AC	6.14%

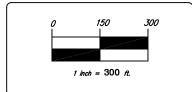
## EASTERN VERNAL POOL

		PRE-DEVELOPMENT		POST-DEVI	ELOPMENT
DISTANCE	TOTAL AREA	AREA DISTURBED	% DISTURBED	AREA DISTURBED	% DISTURBED
0-100' FROM POOL	3.88 AC.	0 AC.	0	0 AC.	0
100-750' FROM POOL	58.12 AC	0 AC.	0	11.83 AC	20.35%

1) TOTAL AREA OF PROPERTY — ±79.74 ACRES
2) TOTAL AREA TO BE CLEARED — ±16.07 ACRES (20.15% OF PROPERTY)



NO.	REVISION	DATE
1	REVISED PER SITING COUNCIL	24 OCT 1
2	REVISED ROAD ALIGNMENT	29 JUN 12
3	CLEARING AREA REVISED	23 JUL 1
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BNE ENERGY, INC. 29 SOUTH MAIN STREET **TOWN CENTER SUITE 200** WEST HARTFORD, CT 06107

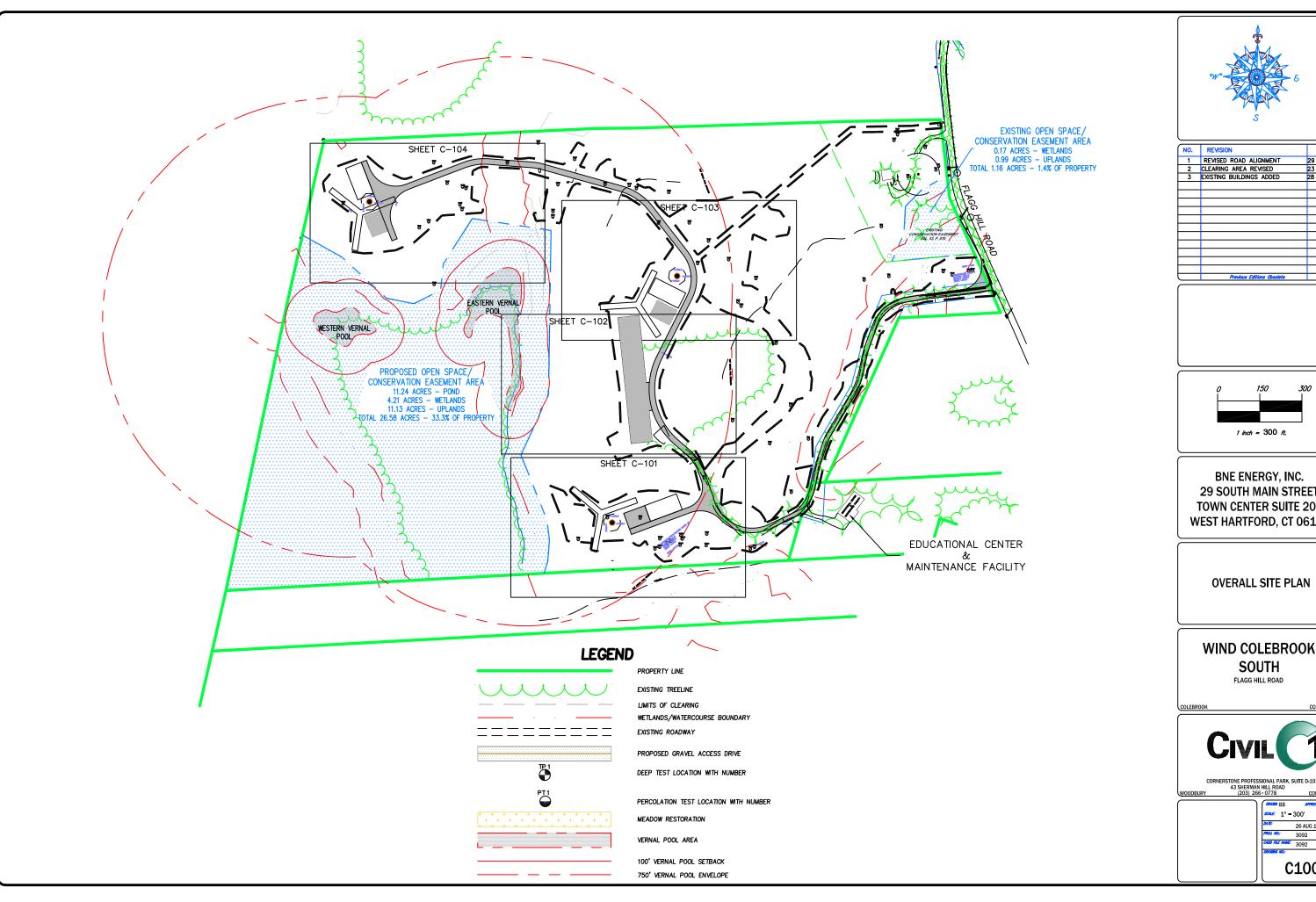
**CLEARING LIMITS PLAN & VERNAL POOL ANALYSIS** 

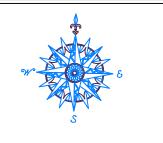
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FLAGG HILL ROAD

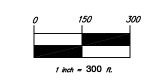


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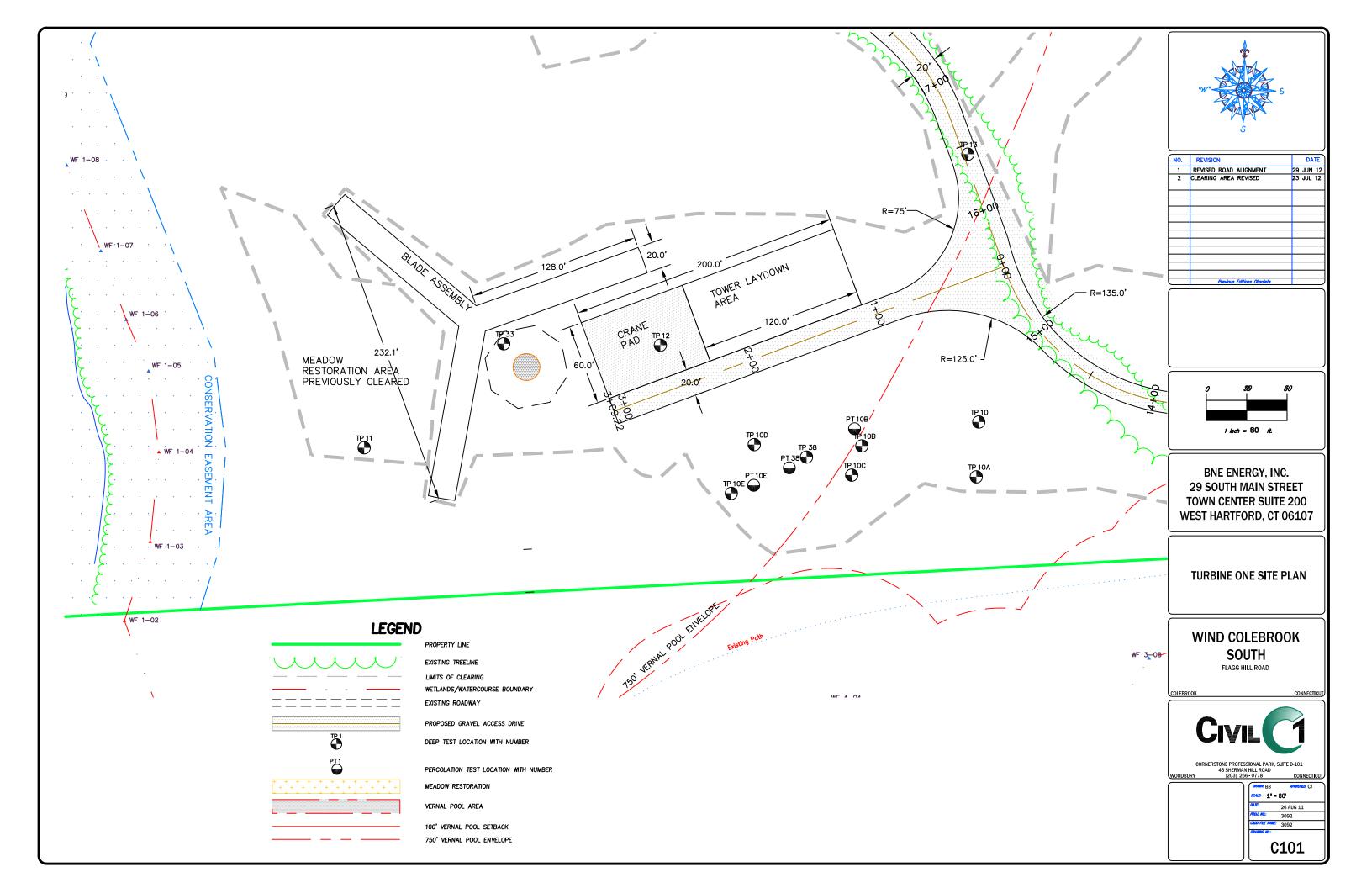
NO.	REVISION	DATE
1	REVISED ROAD ALIGNMENT	29 JUN 12
2	CLEARING AREA REVISED	23 JUL 12
3	EXISTING BUILDINGS ADDED	28 AUG 12
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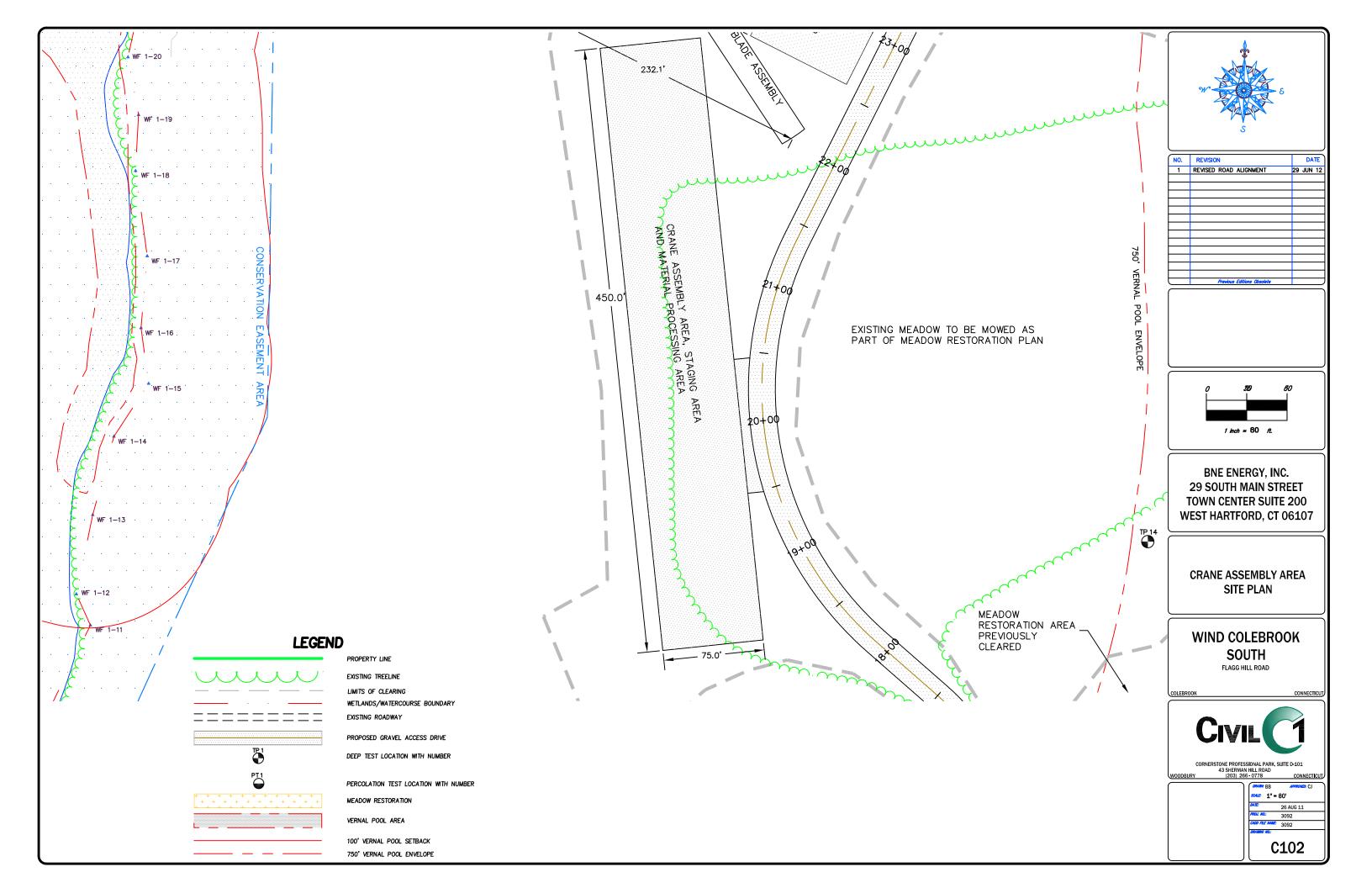


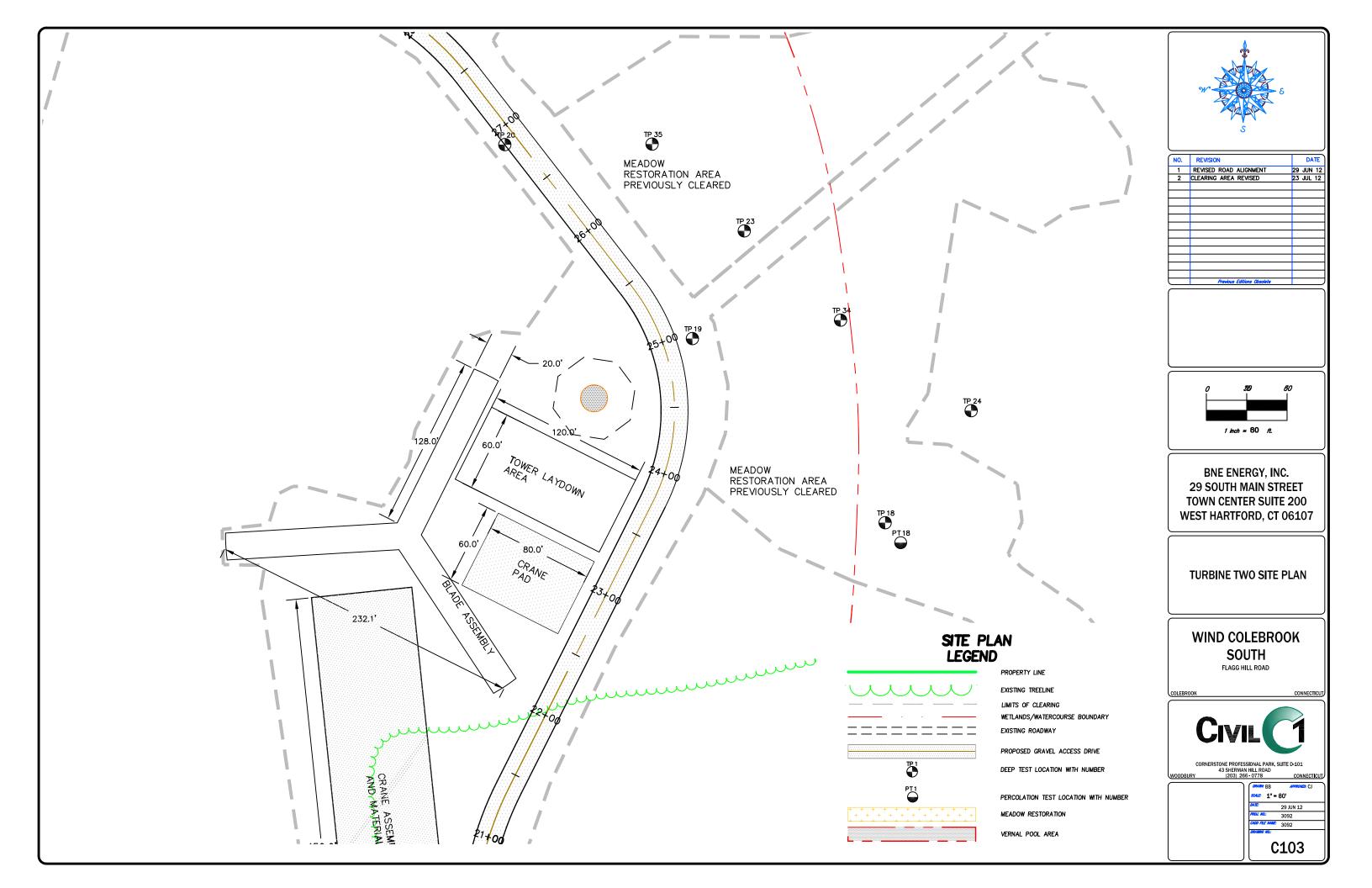
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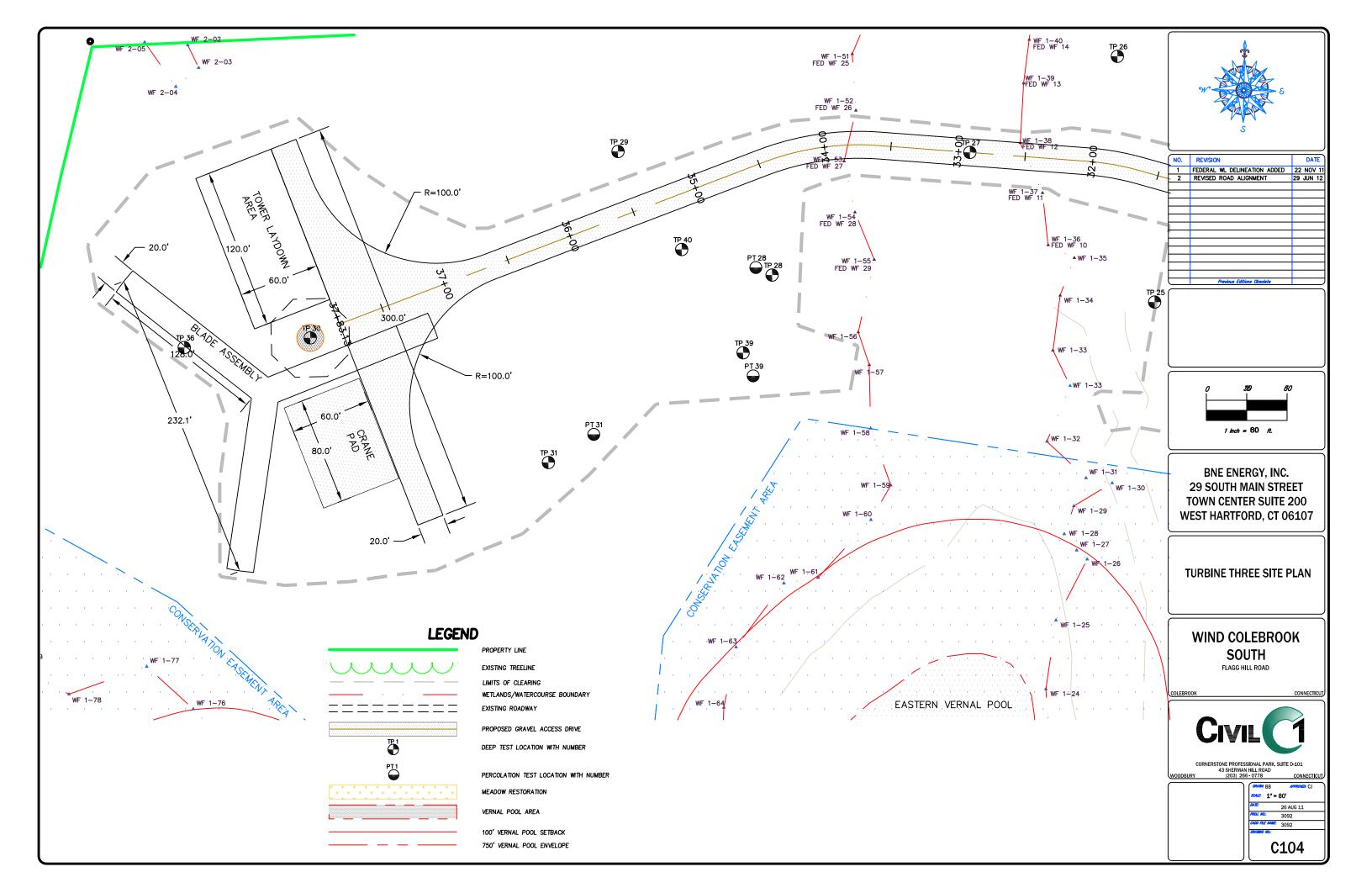


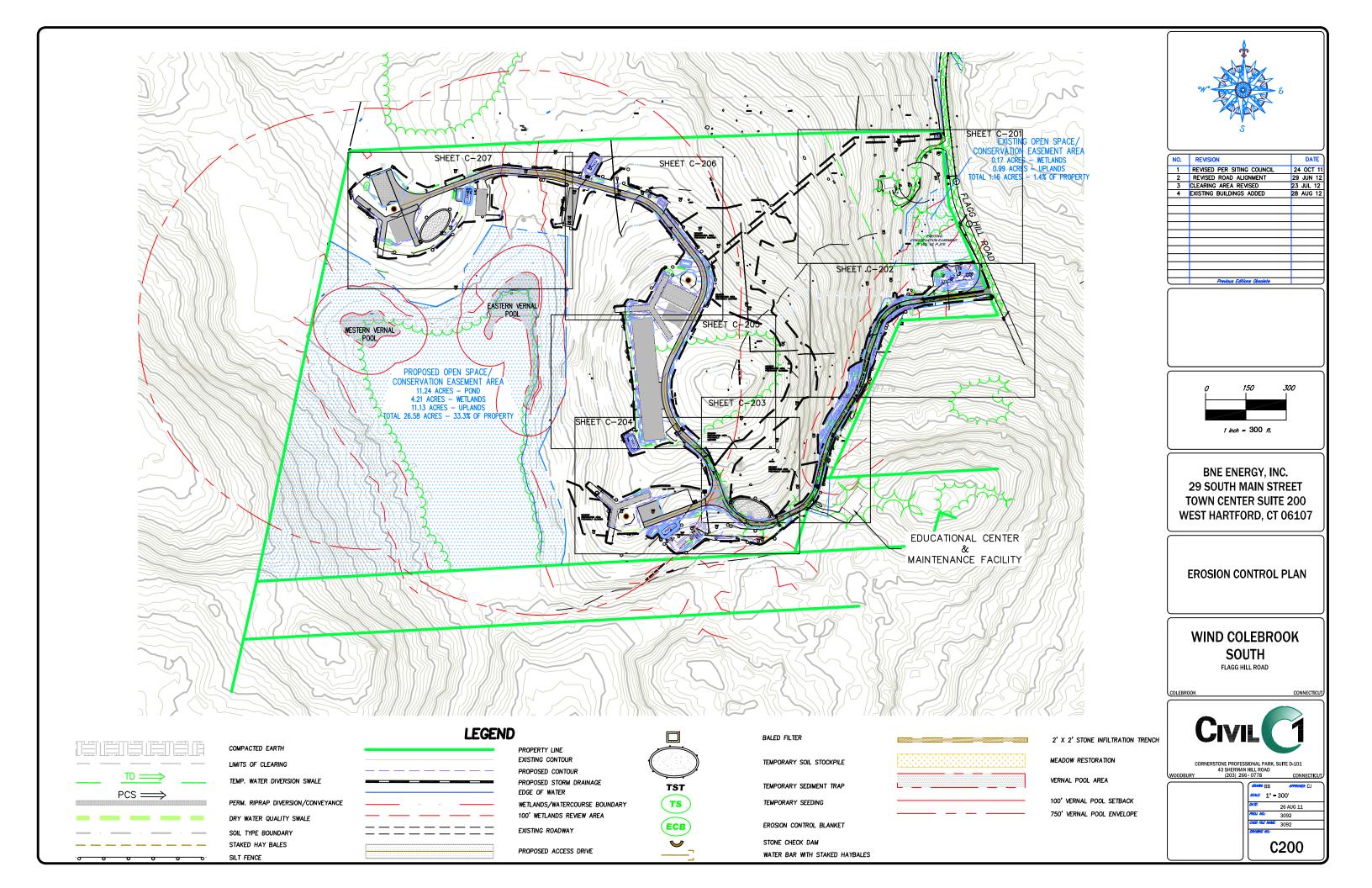
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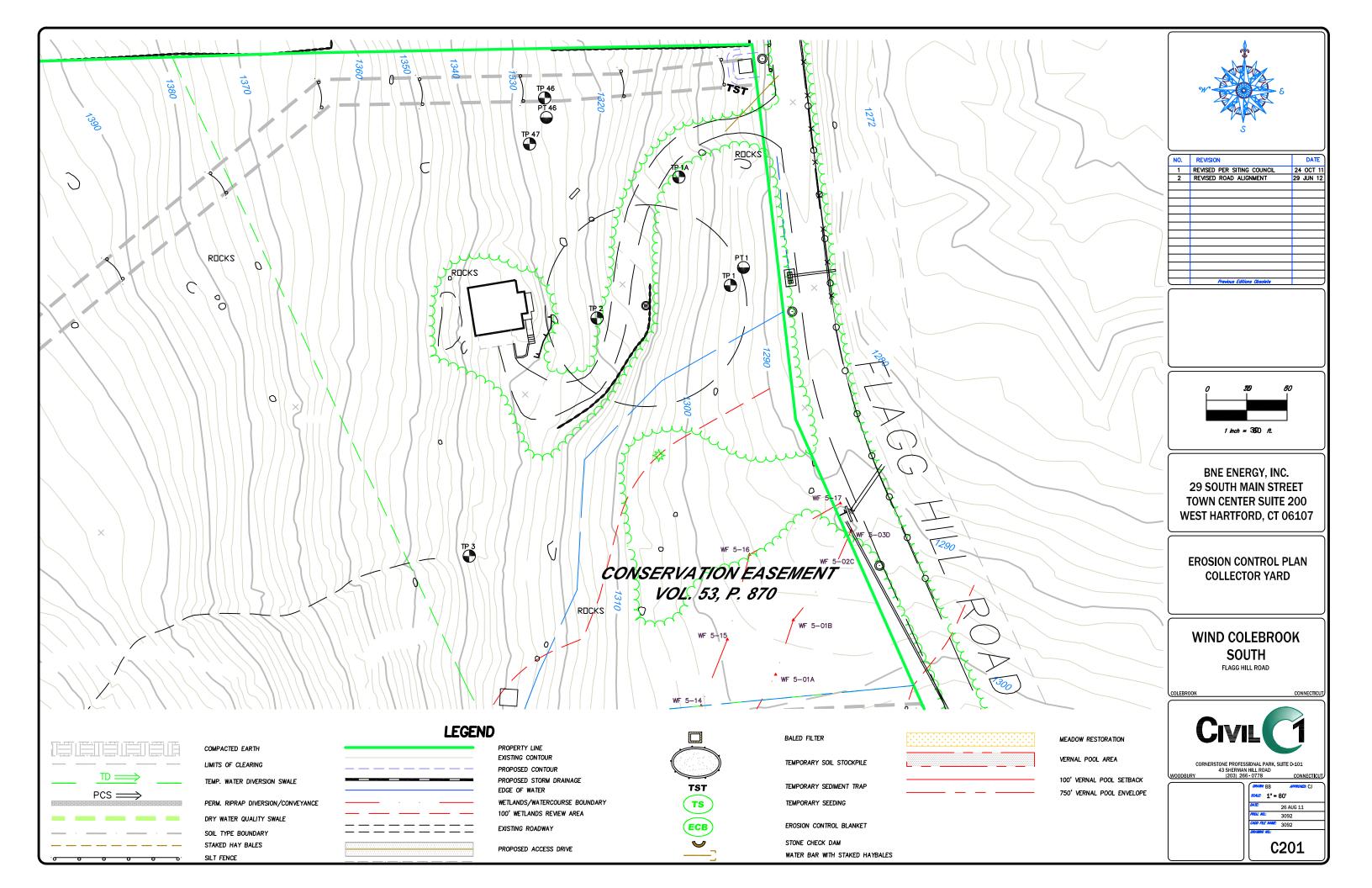


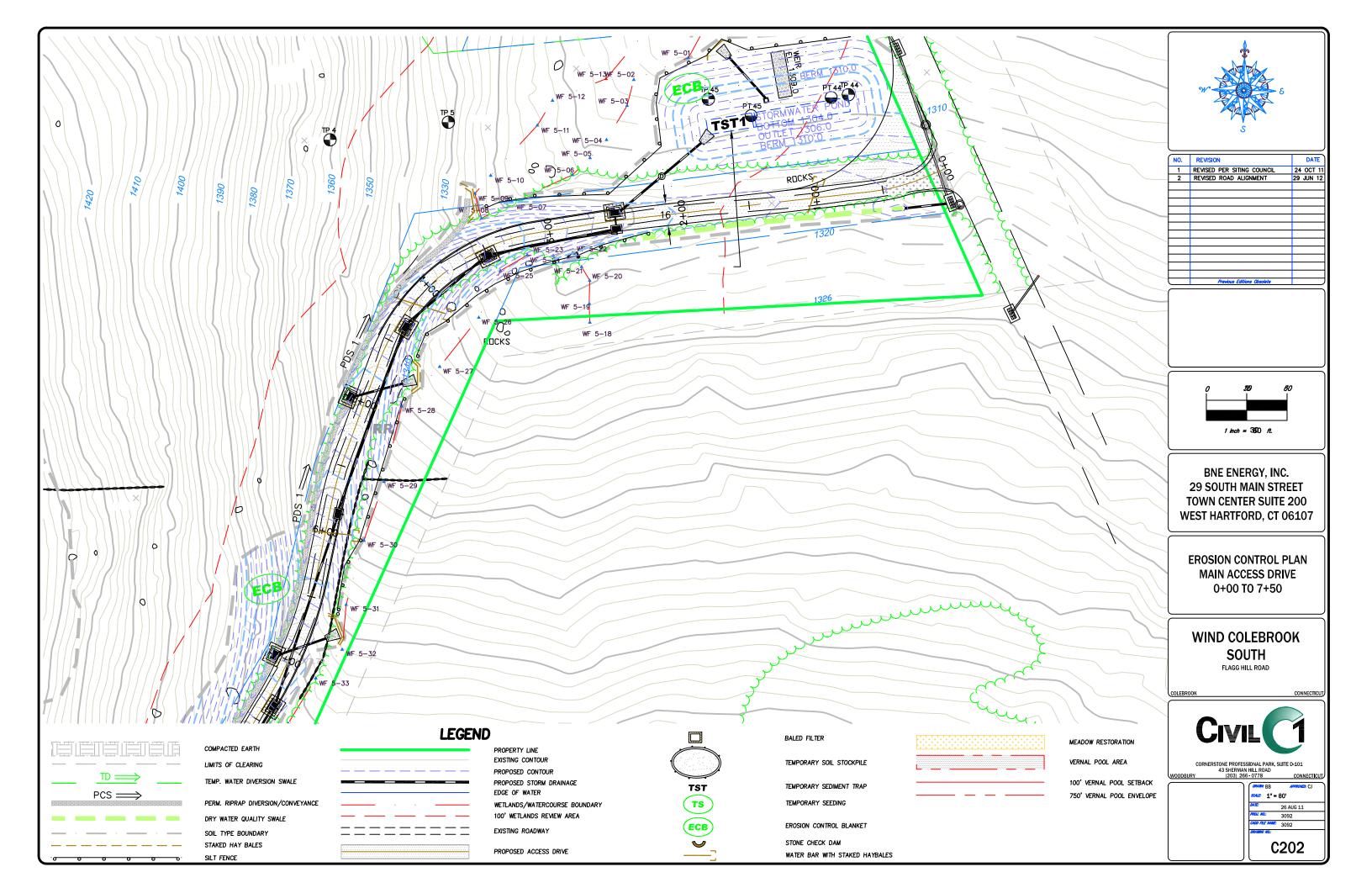


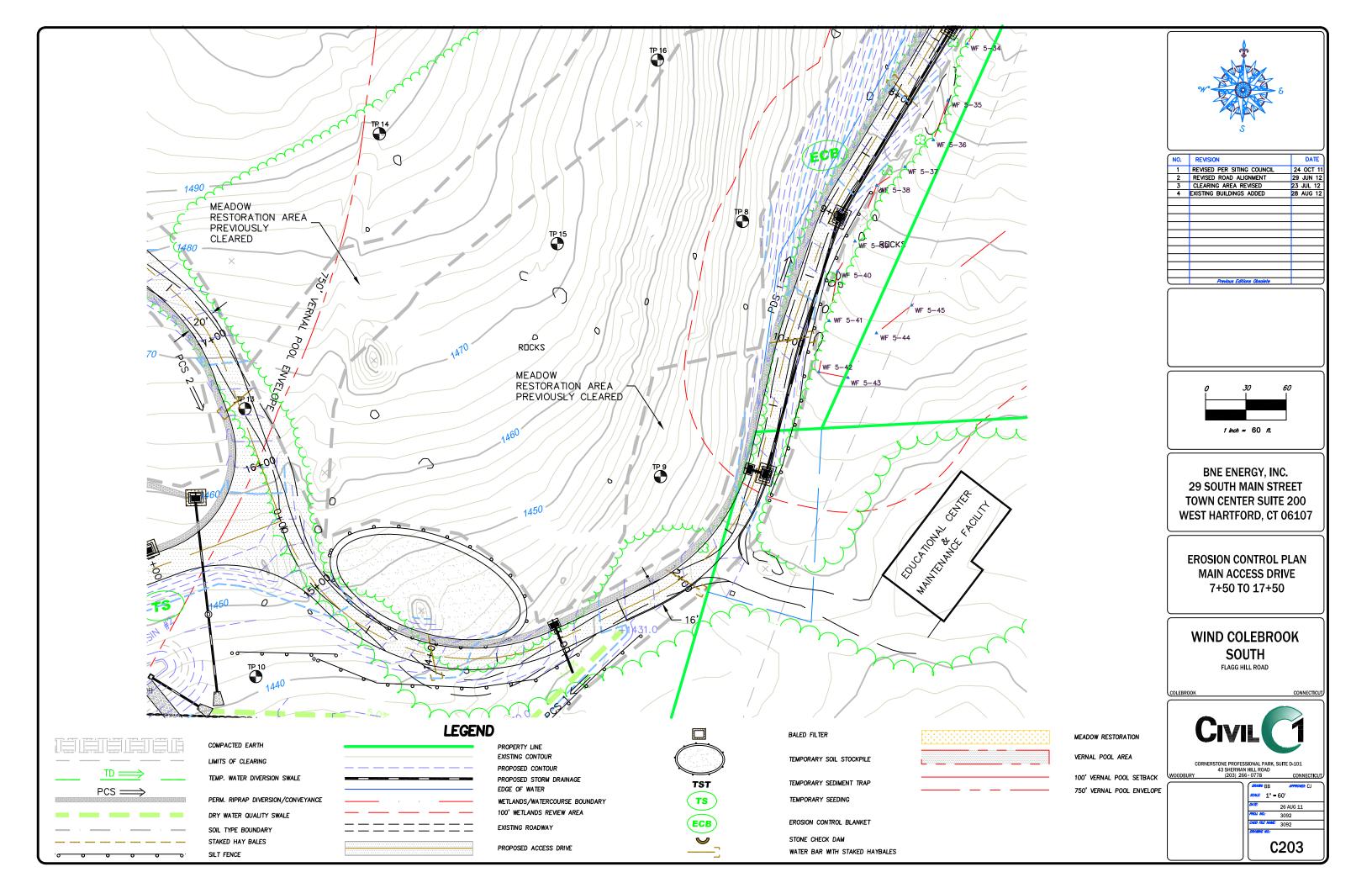


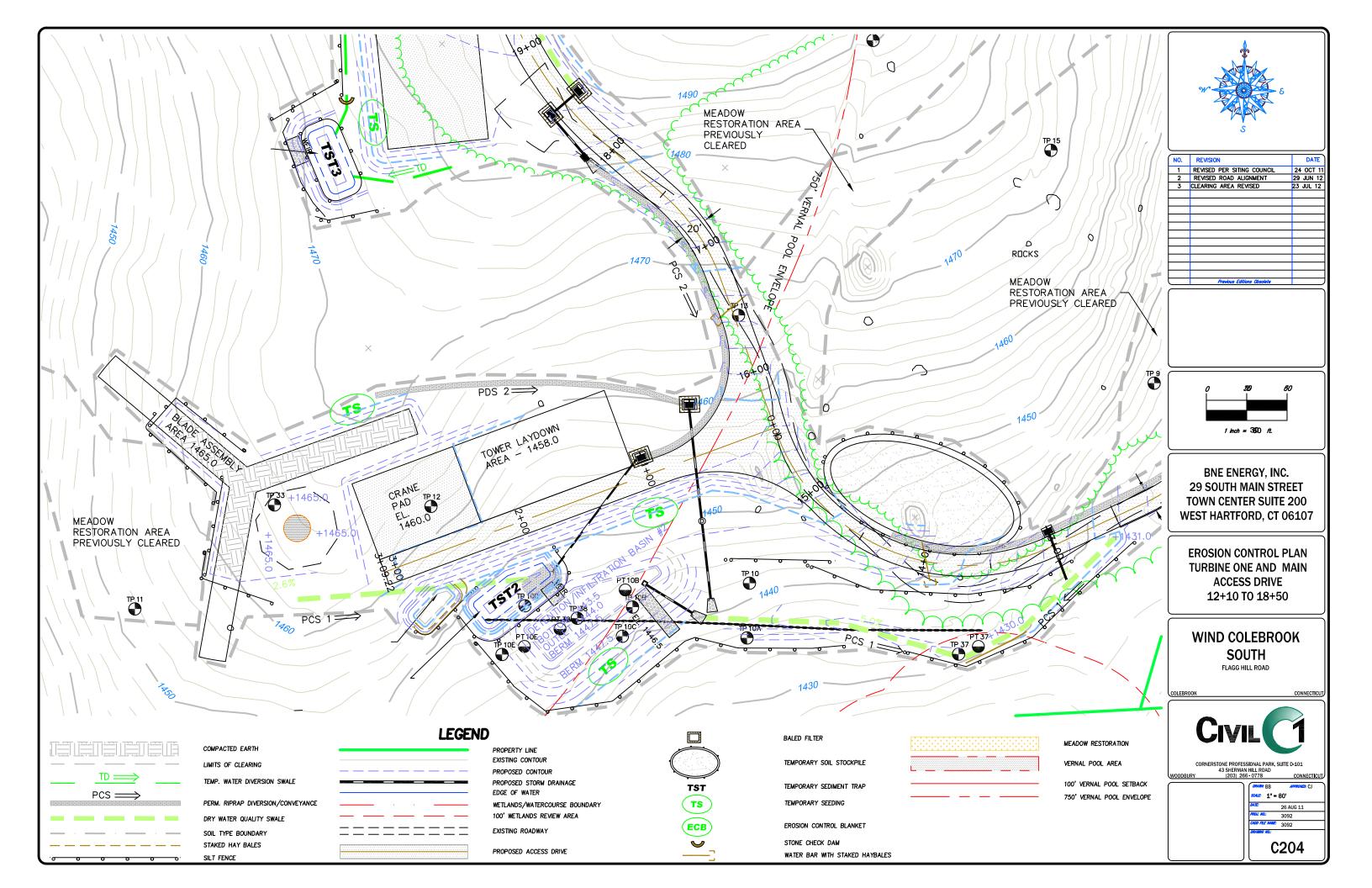


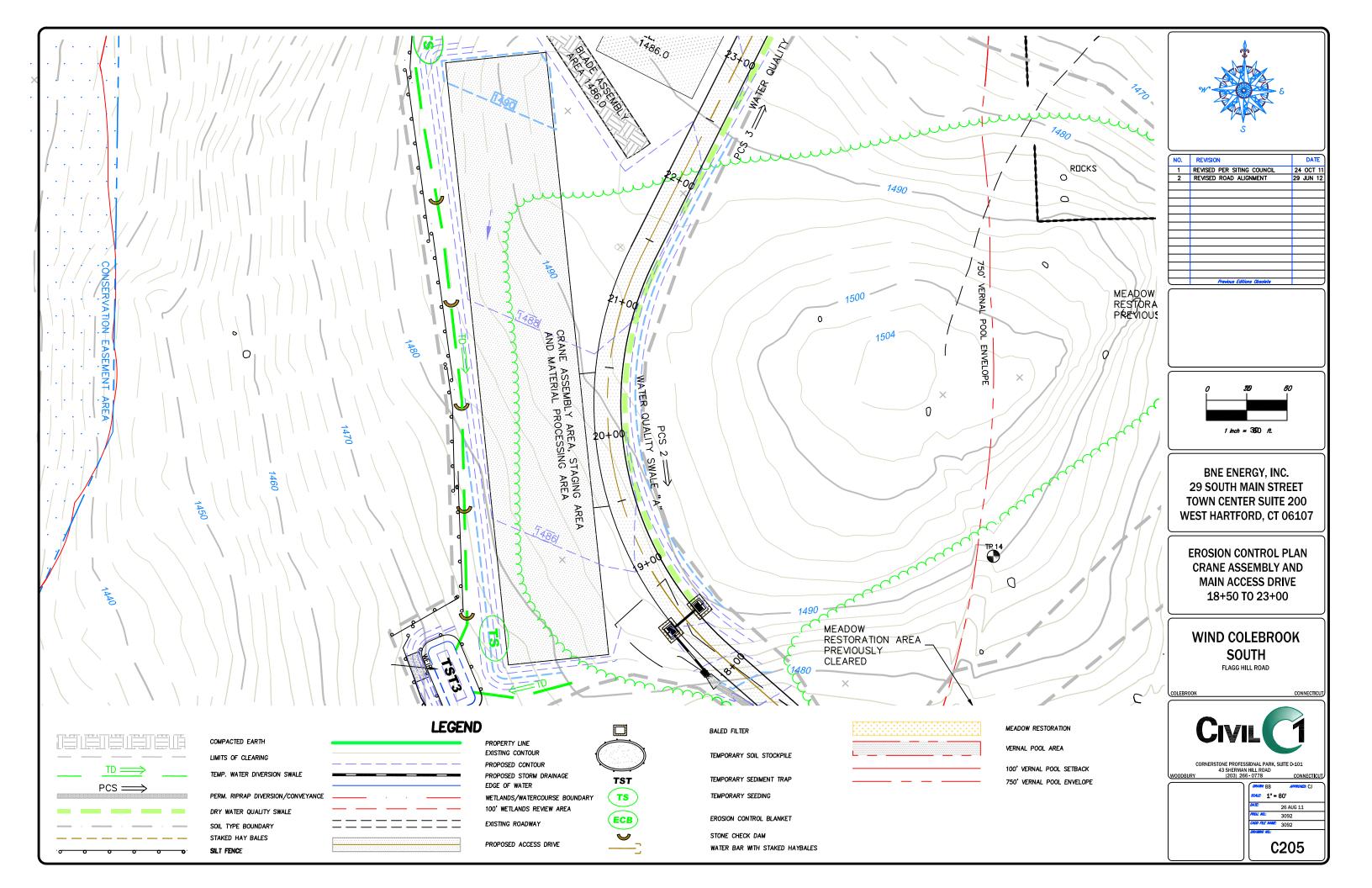


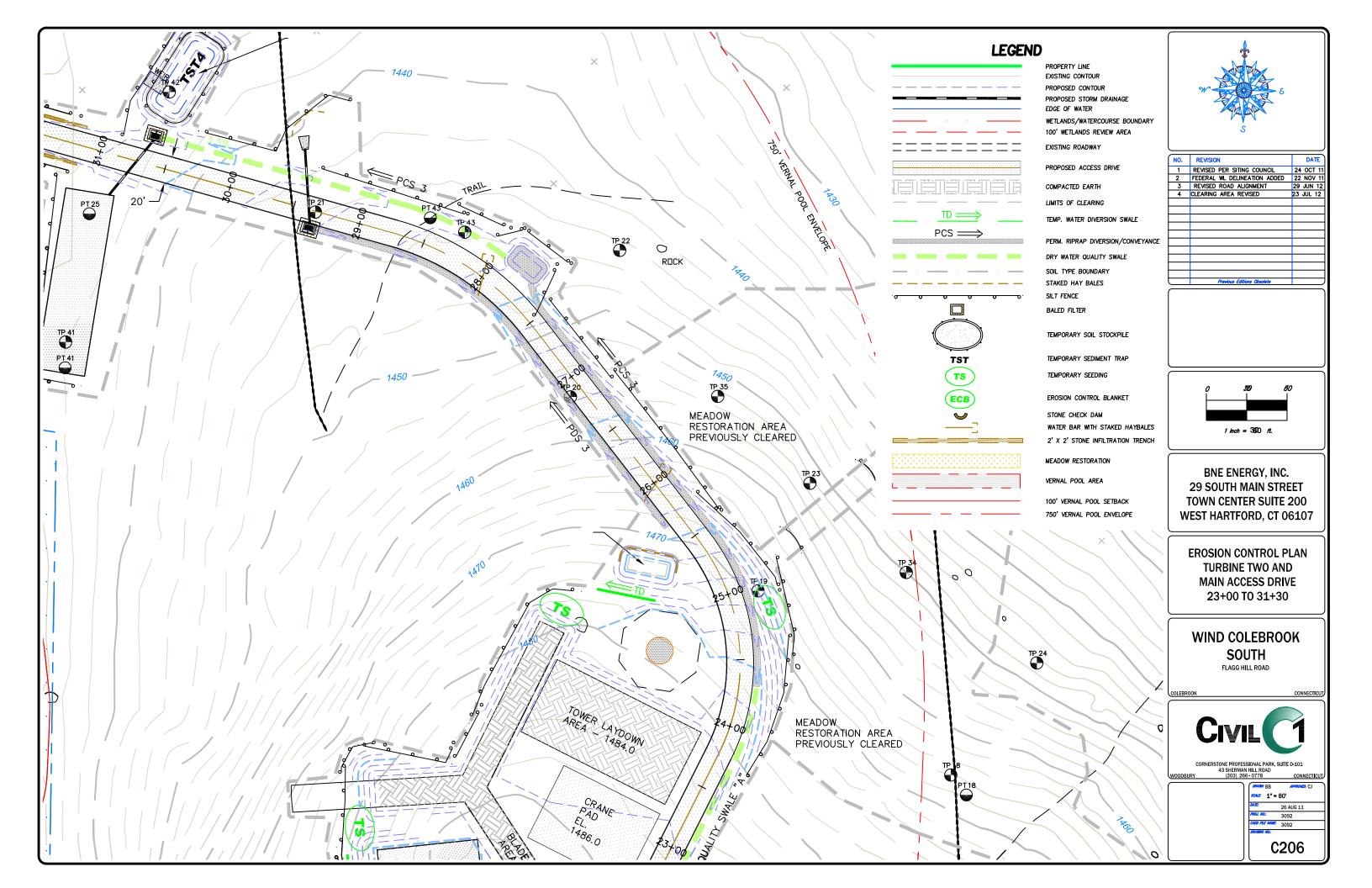


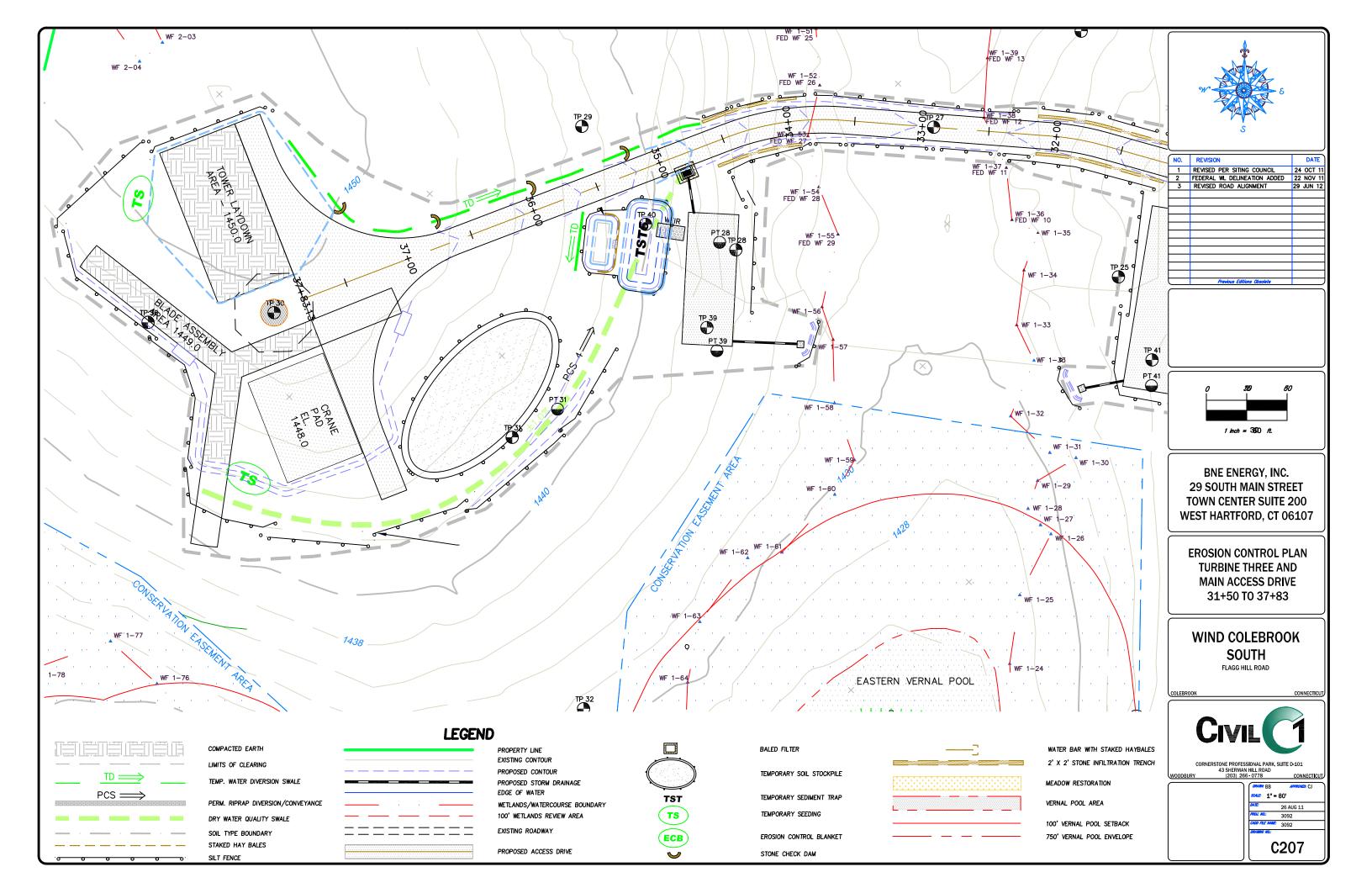


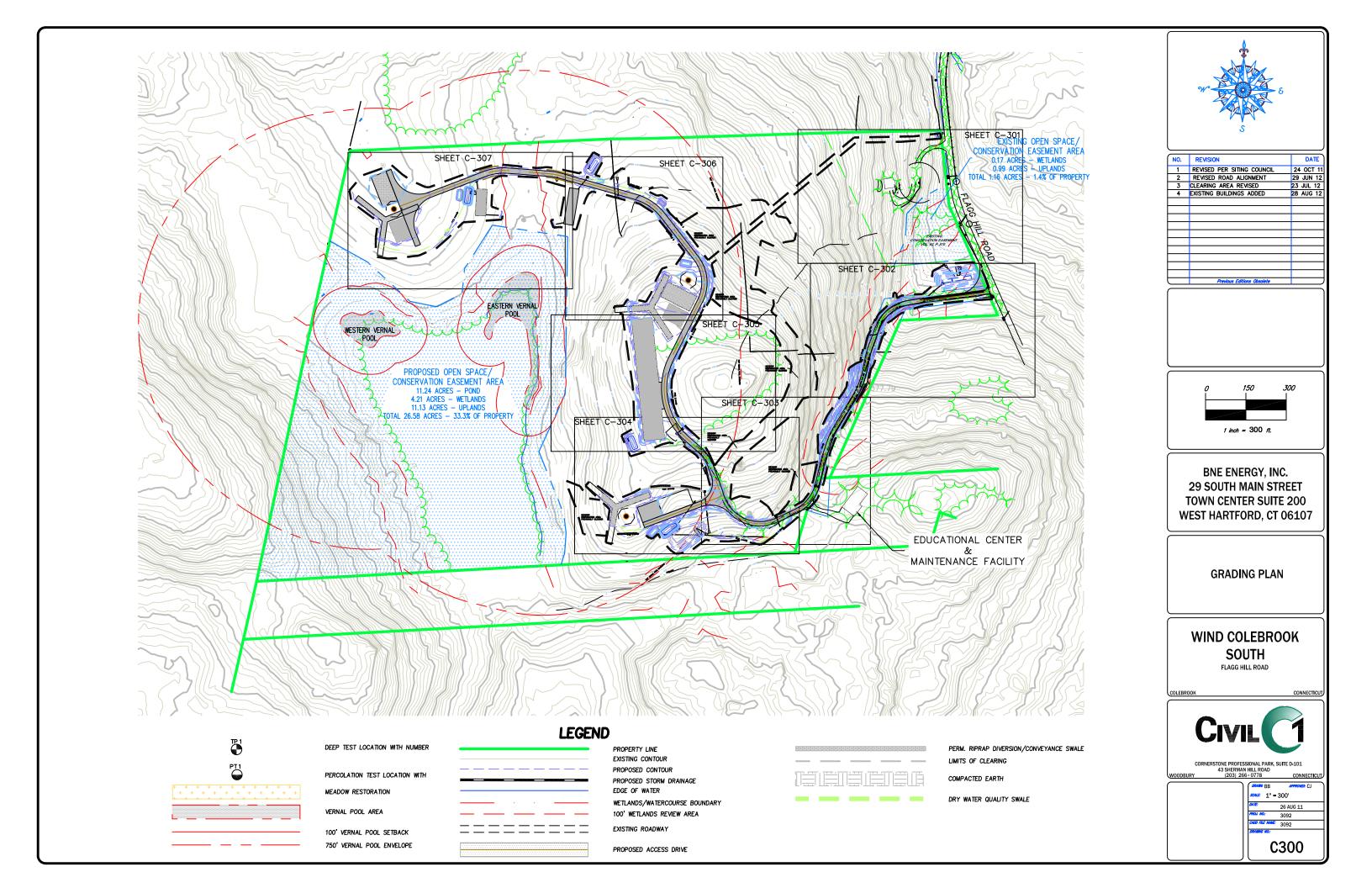


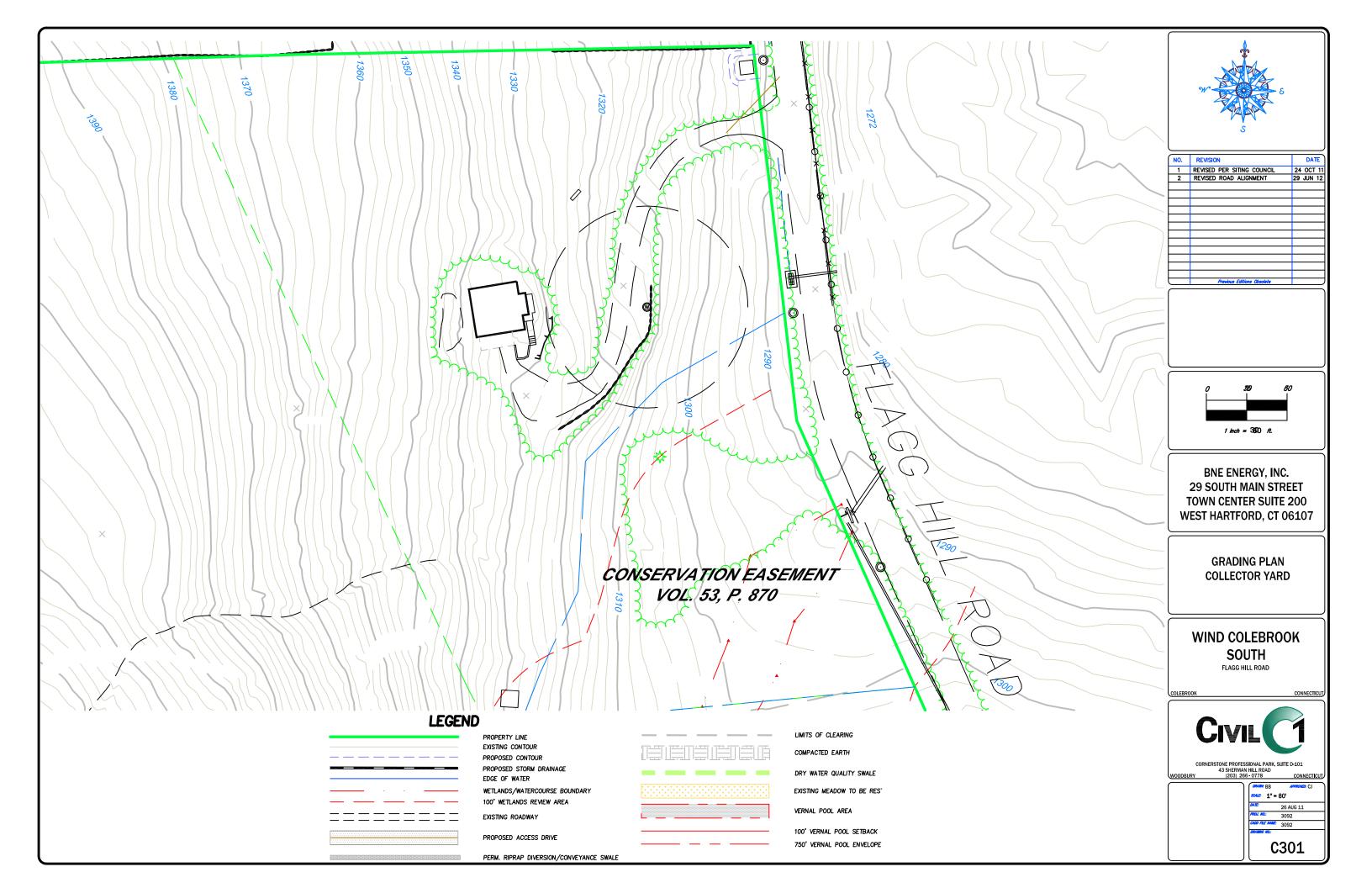


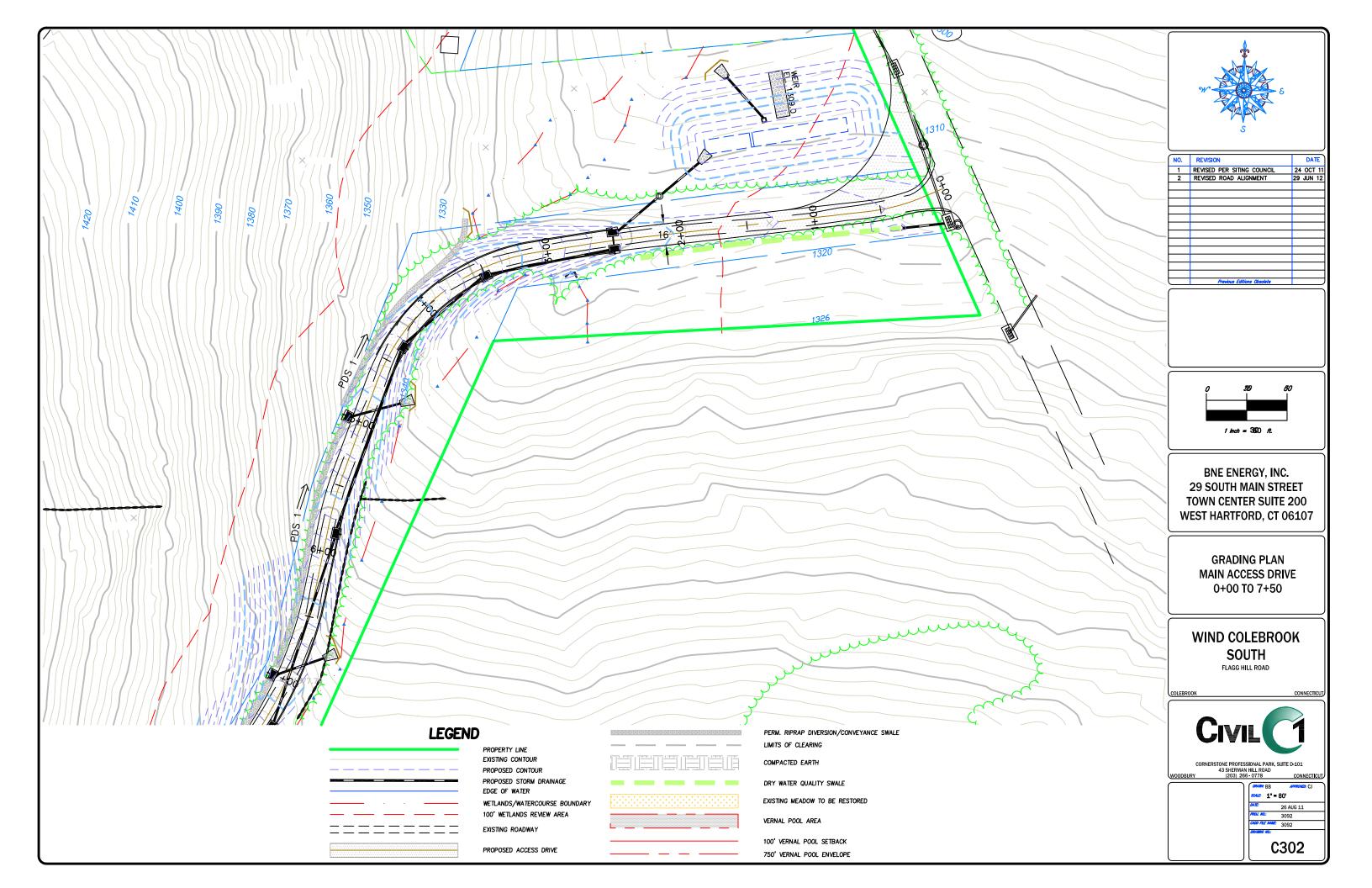


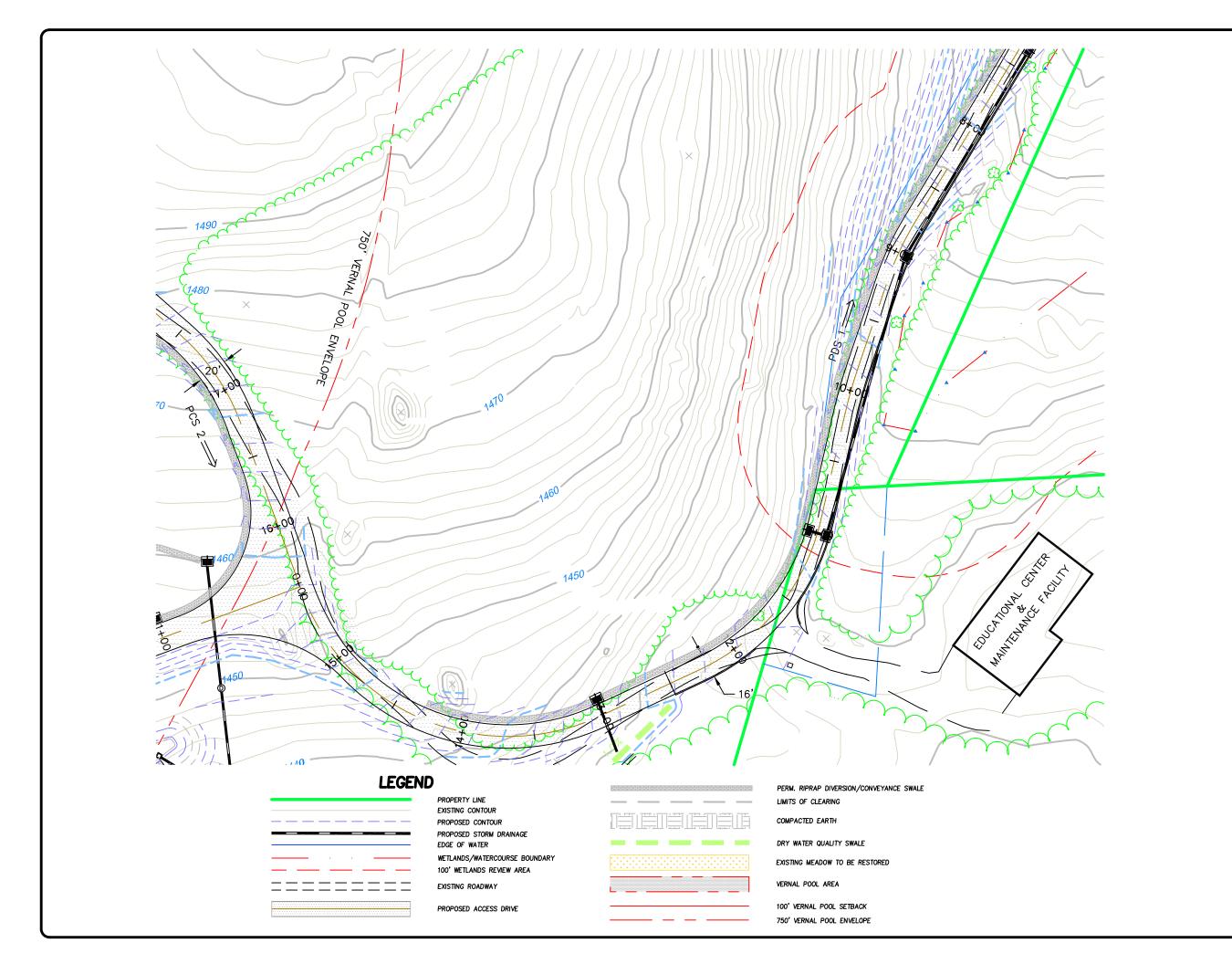


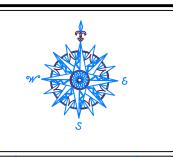




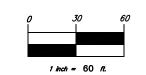








NO.	REVISION	DATE
1	REVISED PER SITING COUNCIL	24 OCT 11
2	REVISED ROAD ALIGNMENT	29 JUN 12
3	EXISTING BUILDINGS ADDED	28 AUG 12
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> GRADING PLAN MAIN ACCESS DRIVE 7+50 TO 17+50

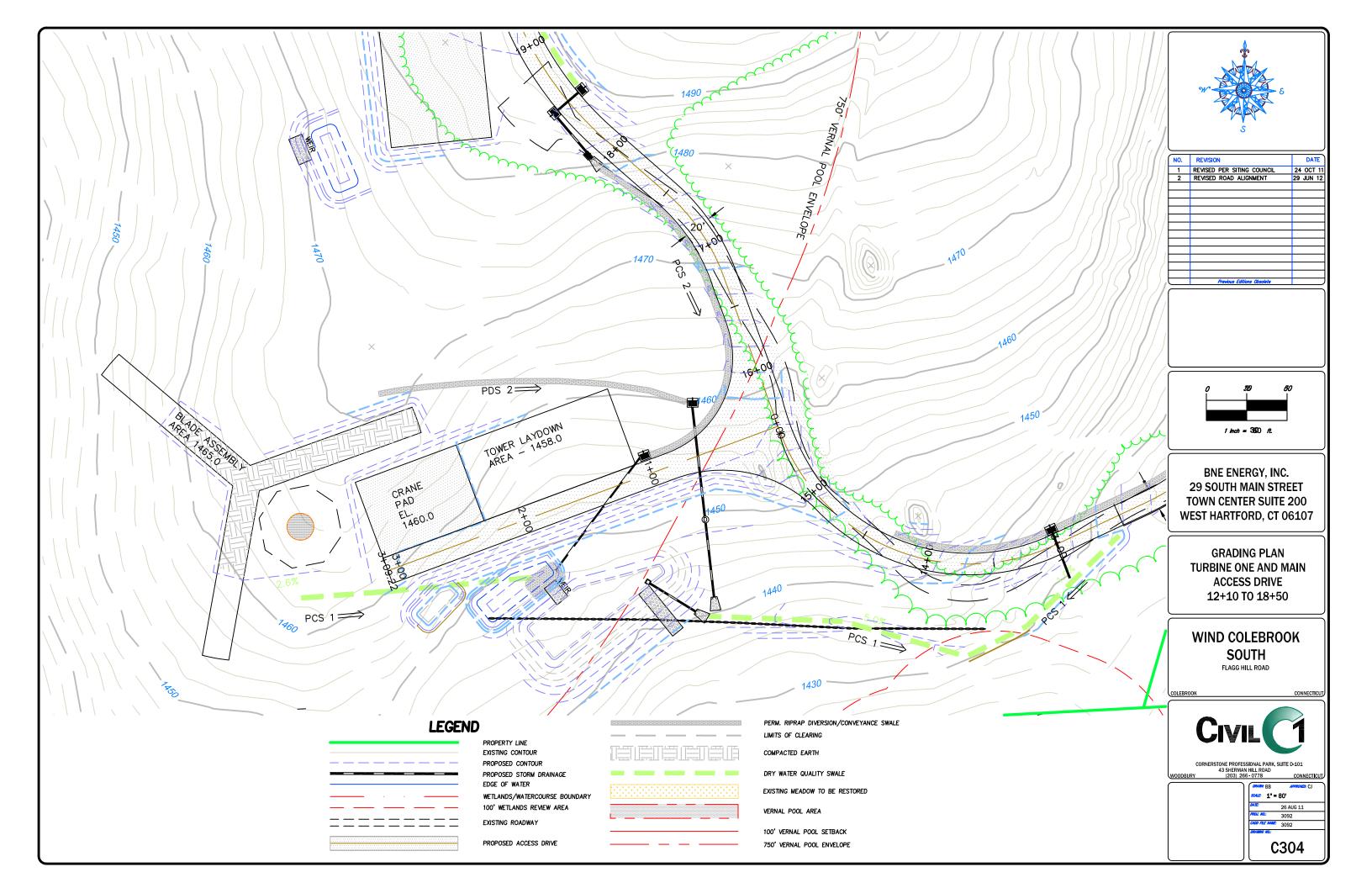
# WIND COLEBROOK SOUTH

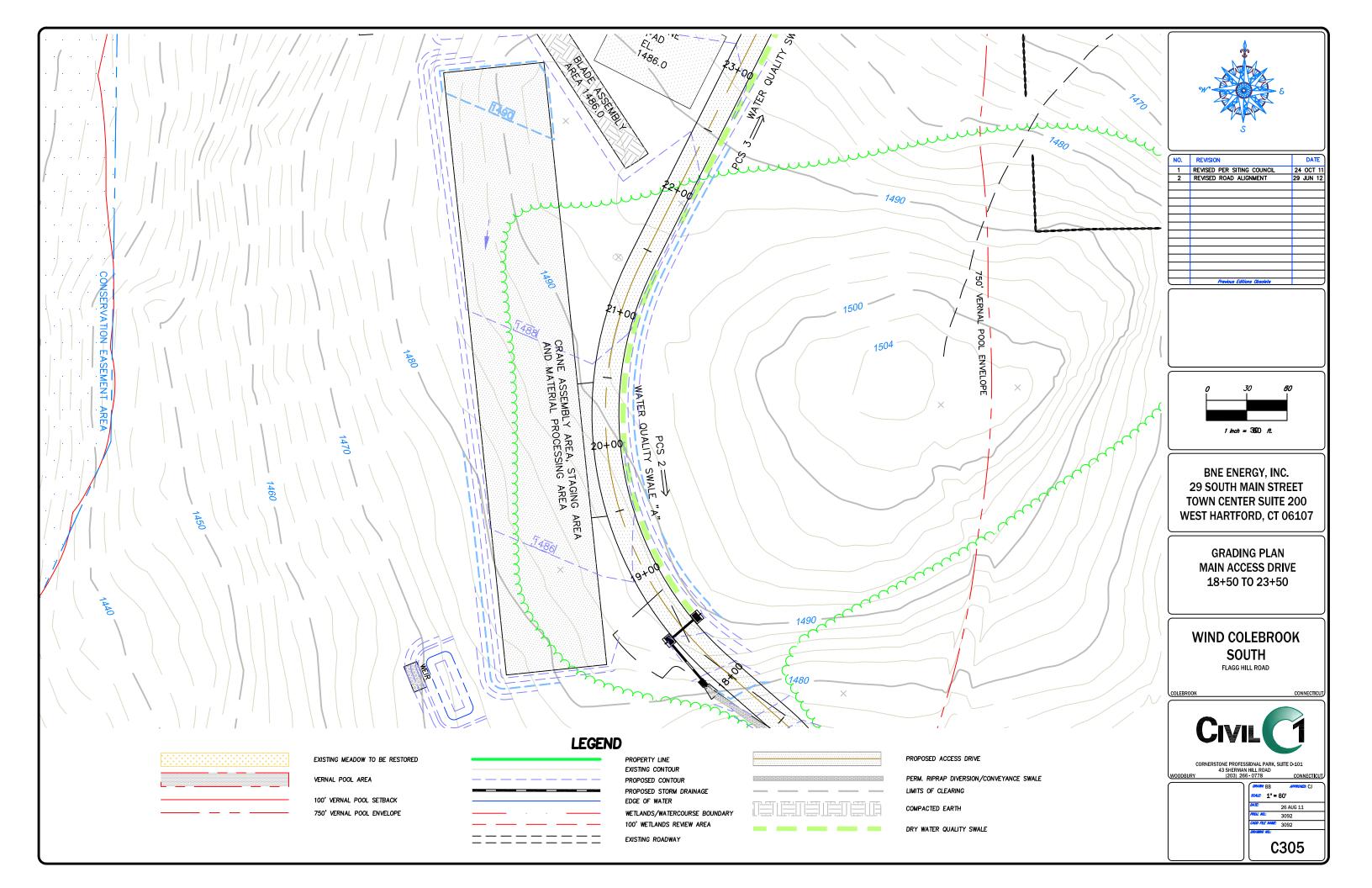
FLAGG HILL ROAD

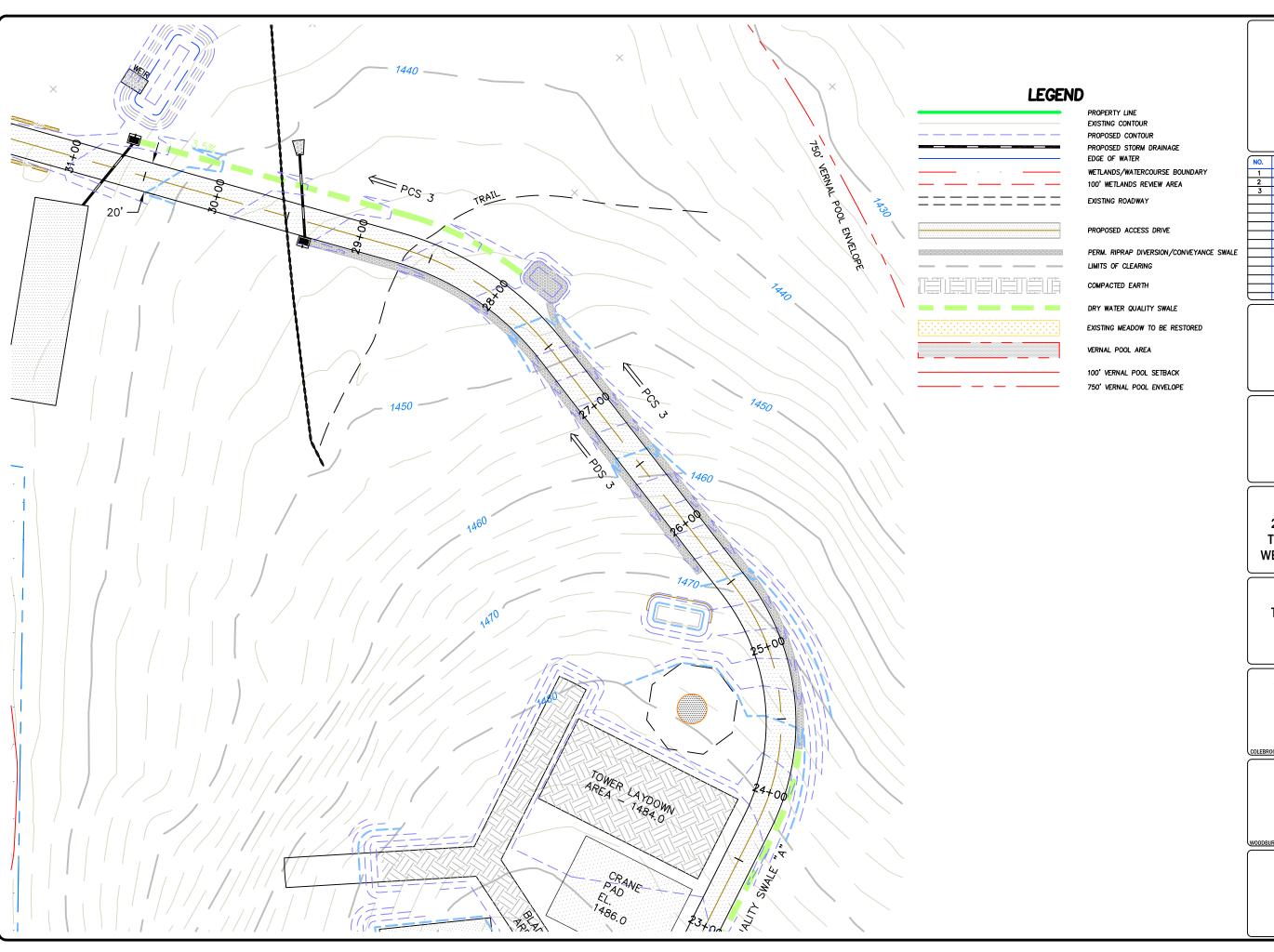
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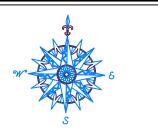


CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
(203) 266-0778 CONNI

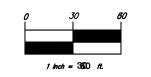








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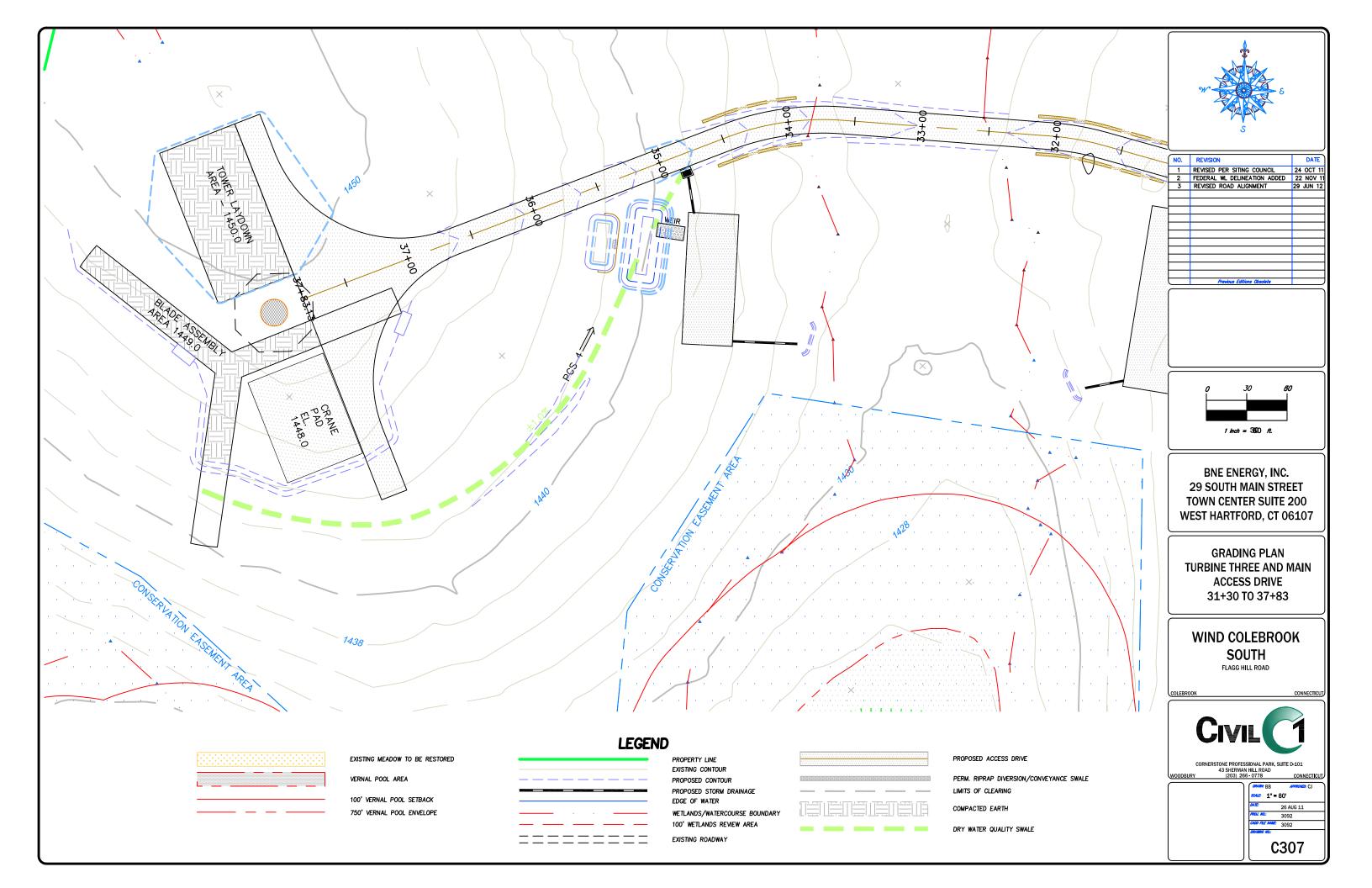


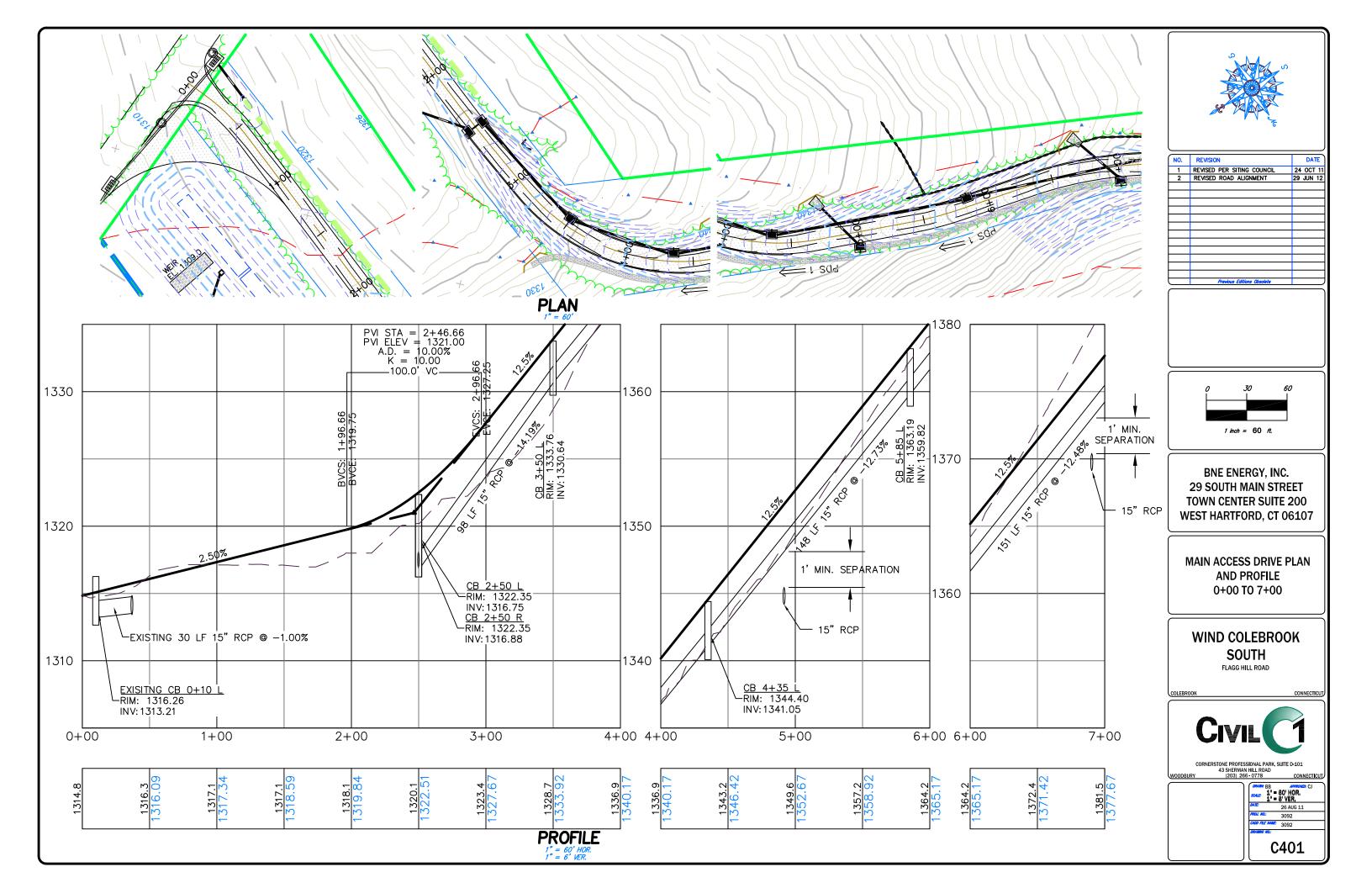
GRADING PLAN TURBINE TWO AND MAIN ACCESS DRIVE 23+50 TO 31+30

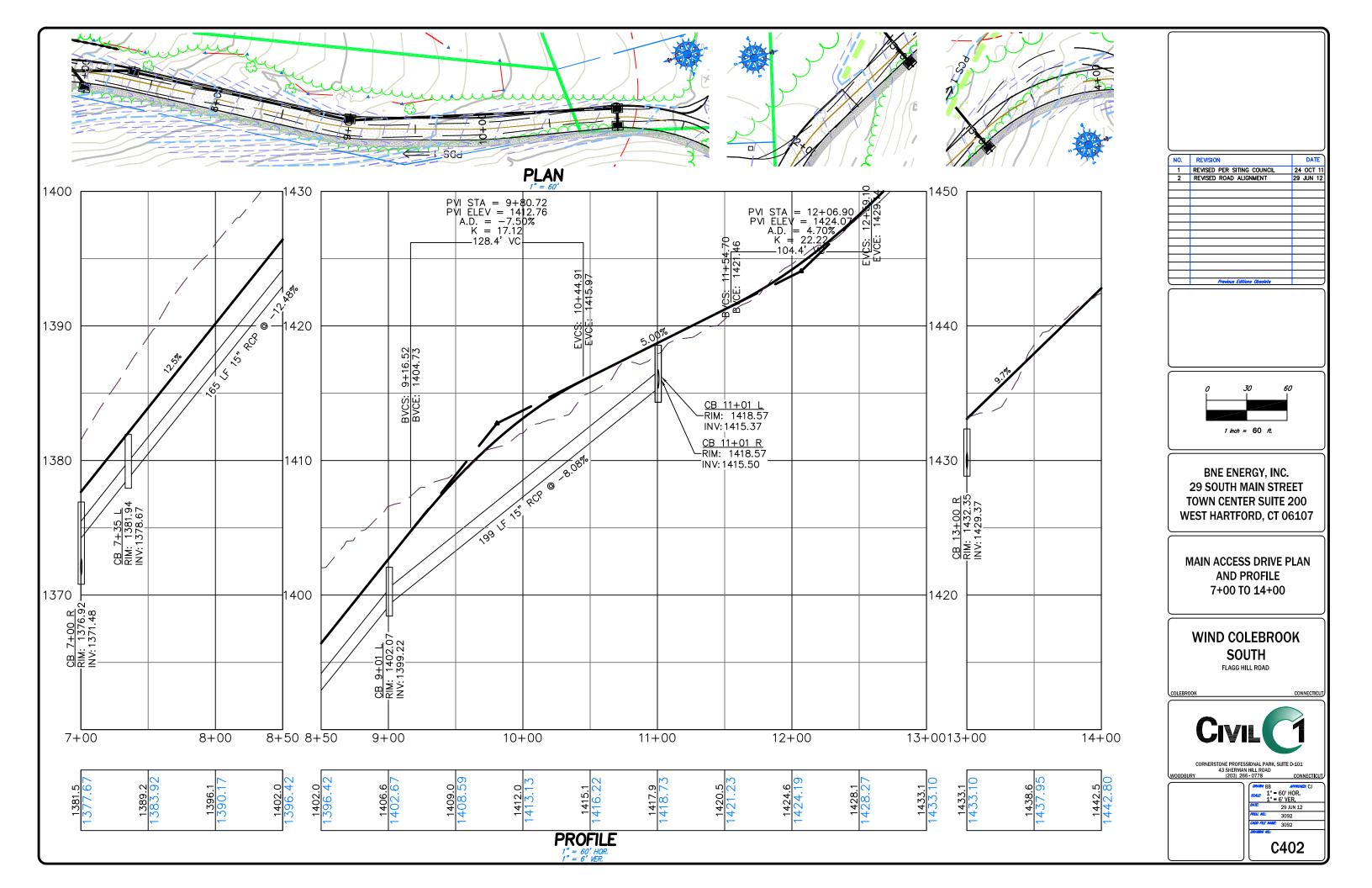
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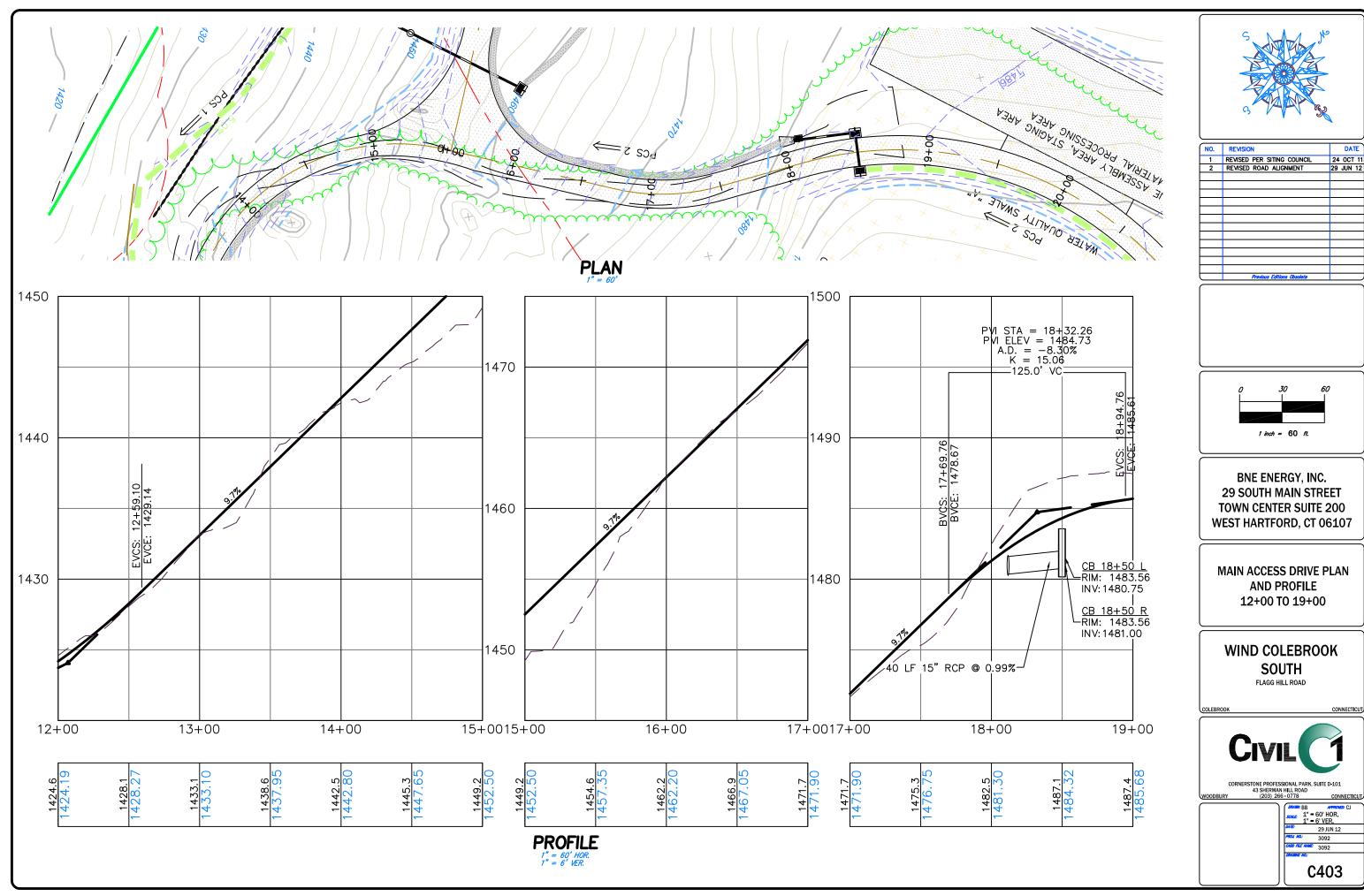
FLAGG HILL ROAD

CIVIL CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD

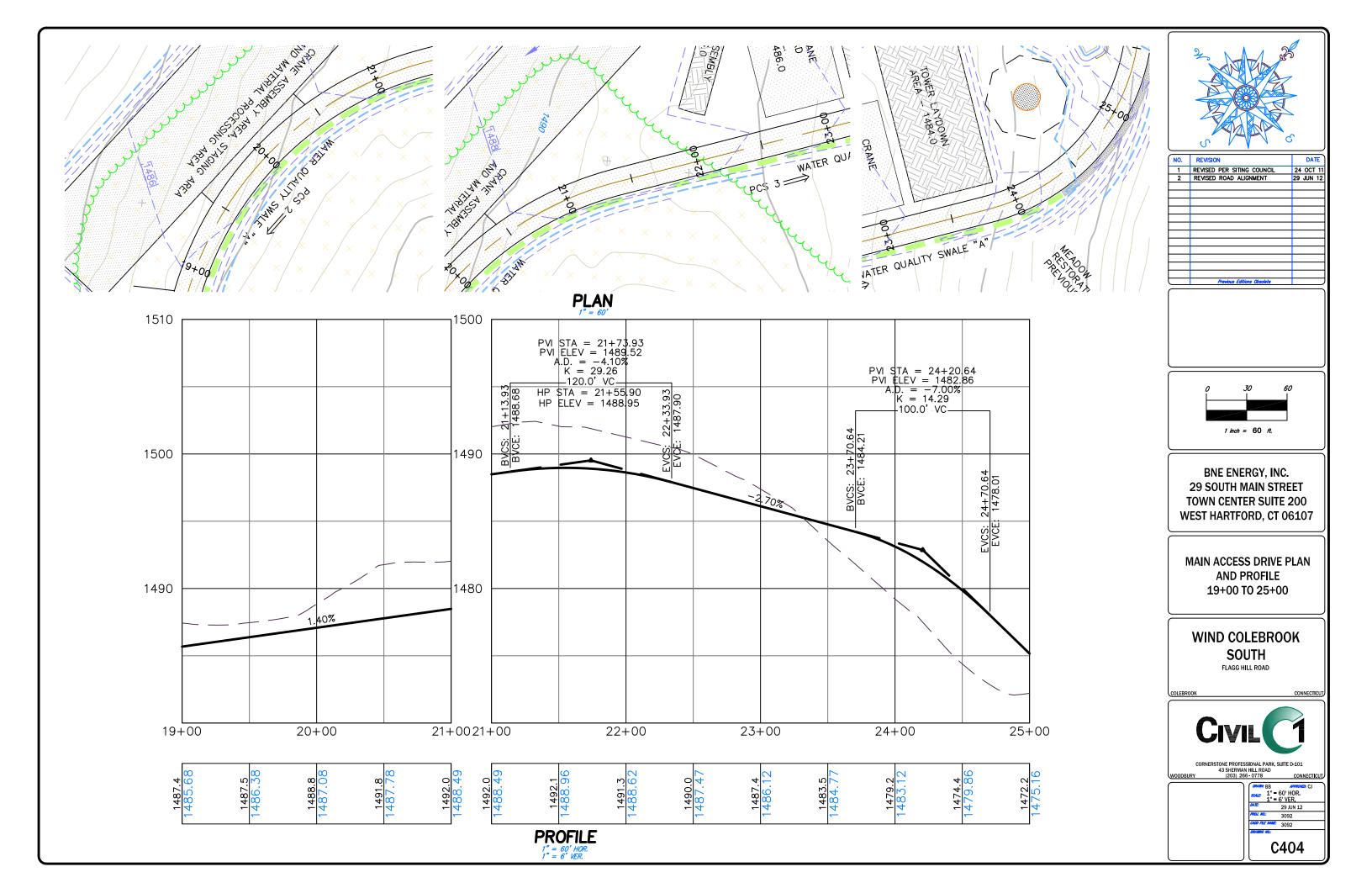


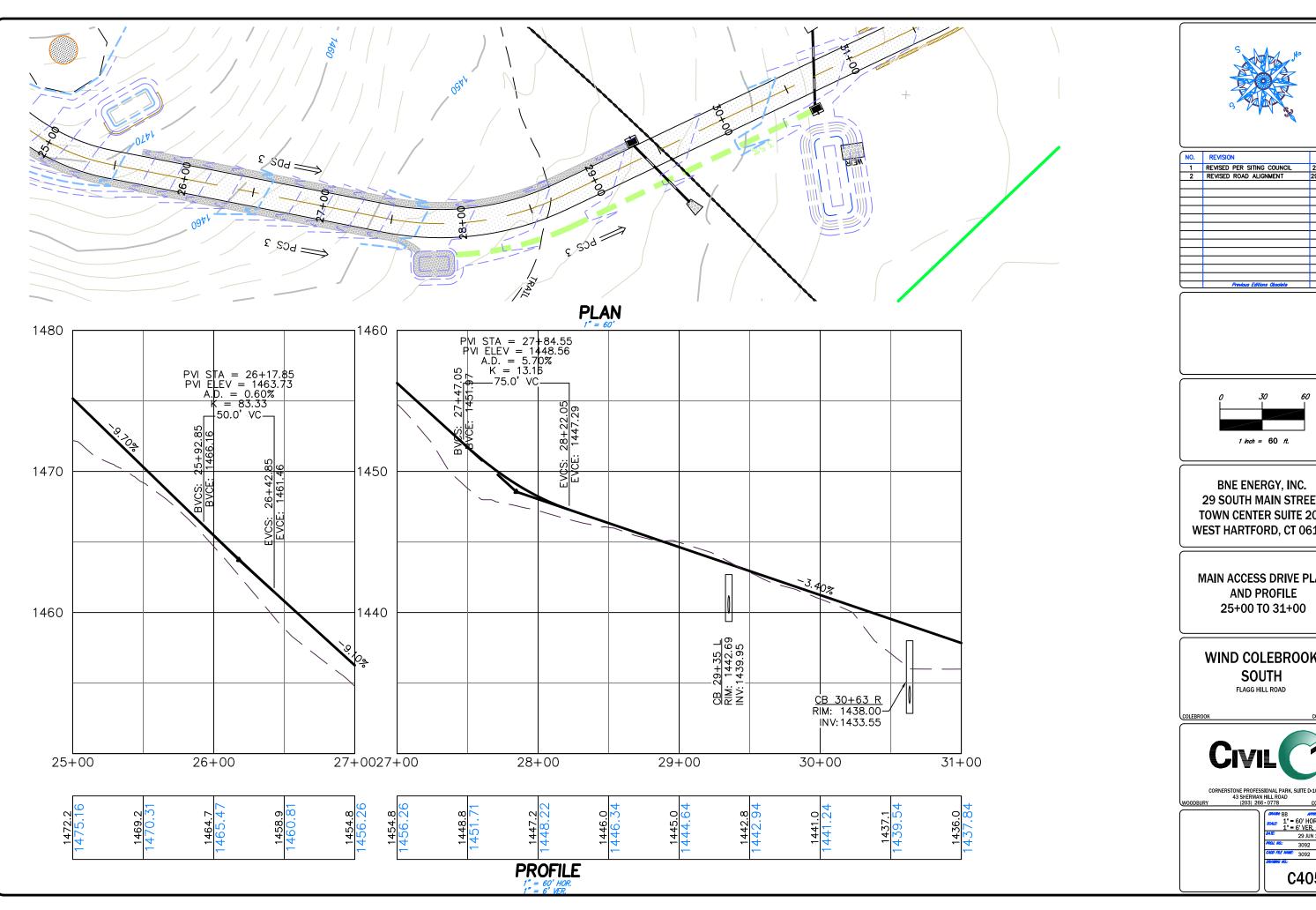






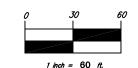
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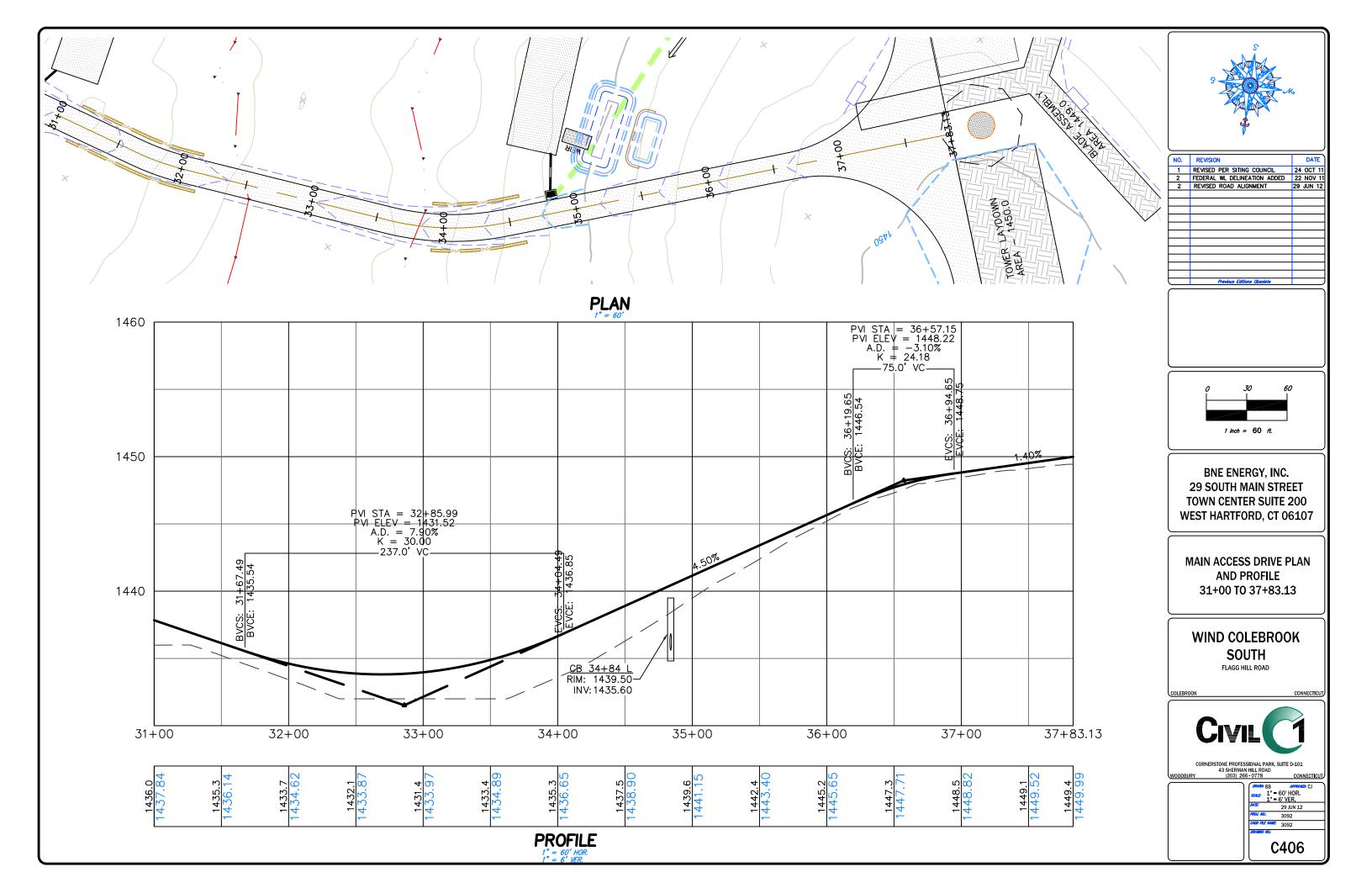
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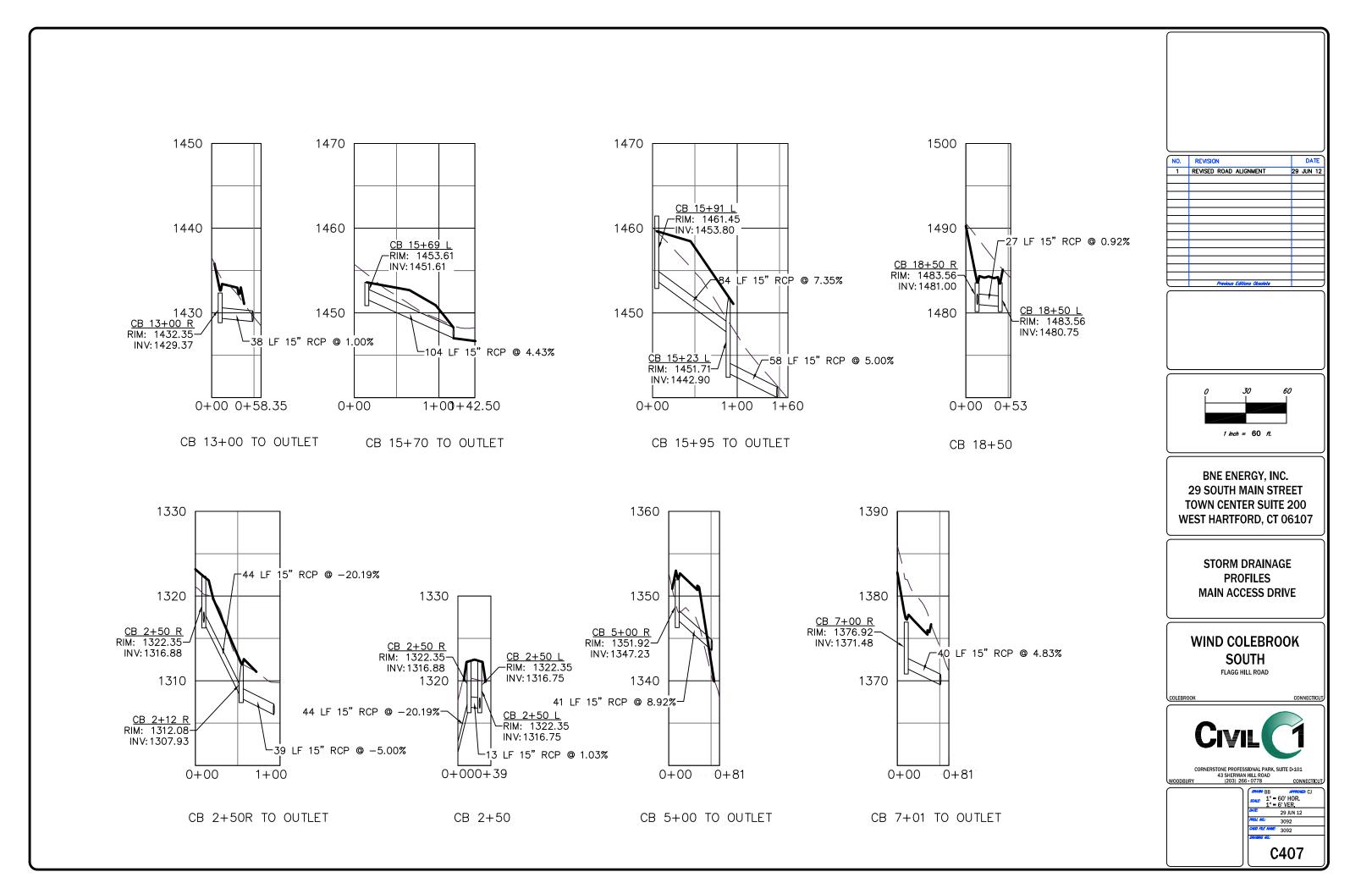


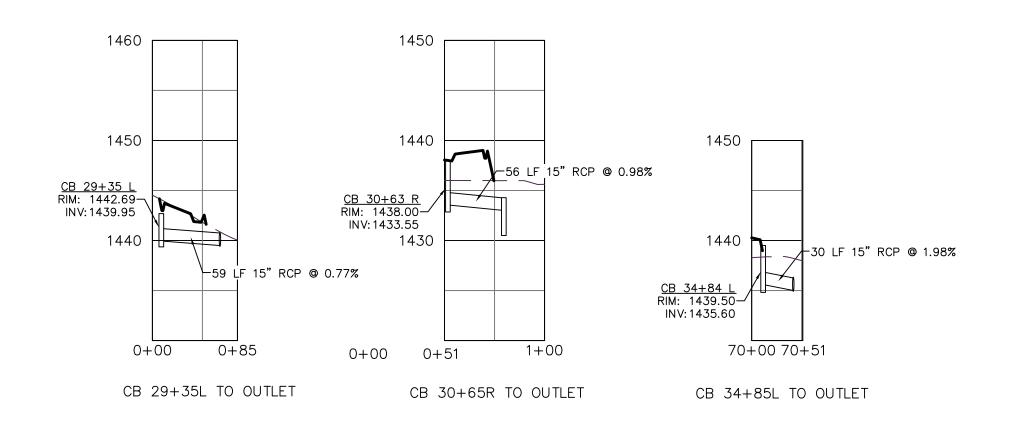
MAIN ACCESS DRIVE PLAN AND PROFILE 25+00 TO 31+00

## WIND COLEBROOK

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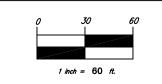








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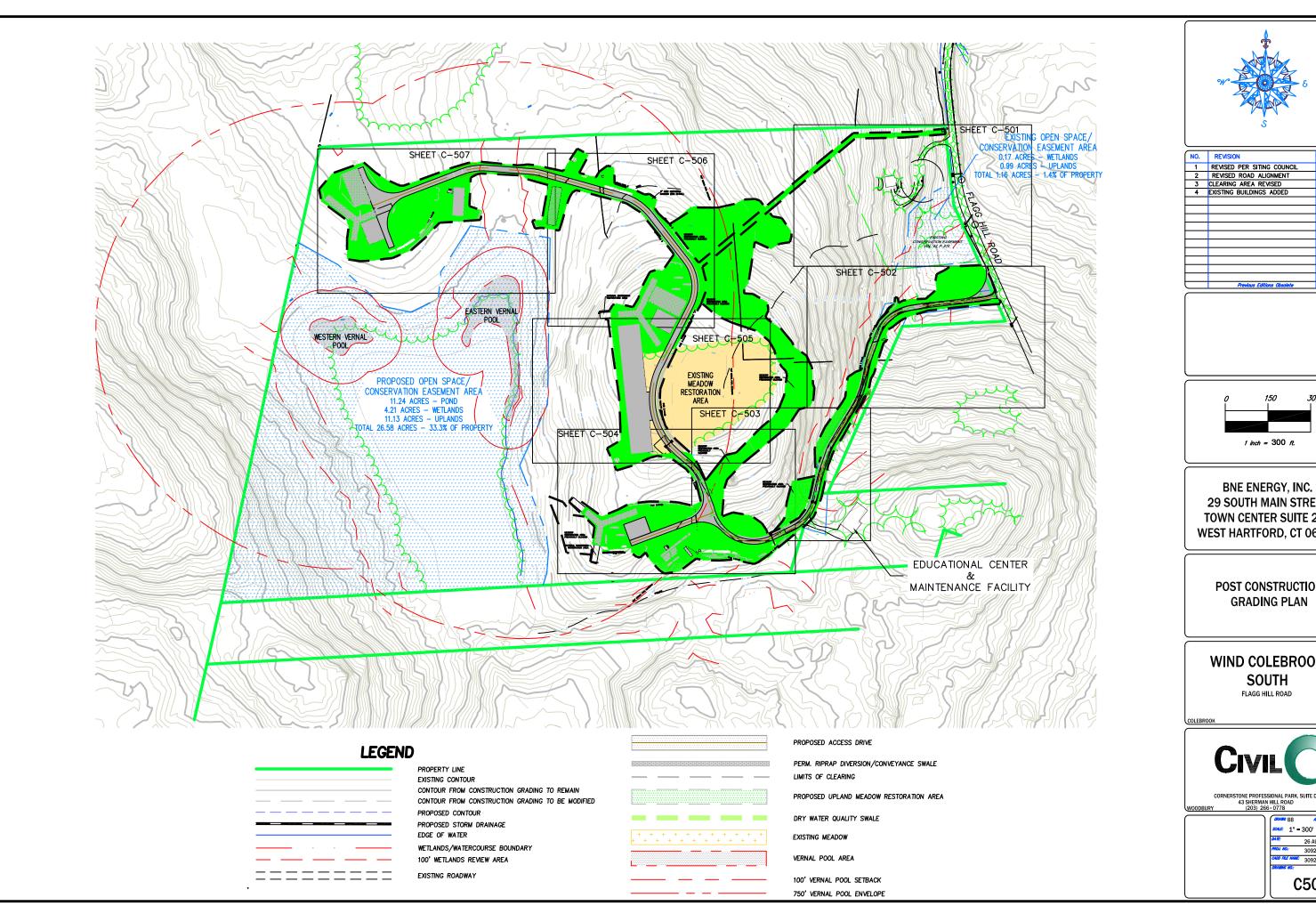


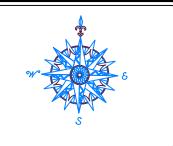
> STORM DRAINAGE PROFILES MAIN ACCESS DRIVE

## WIND COLEBROOK SOUTH

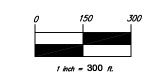
FLAGG HILL ROAD

CIVIL CONNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD





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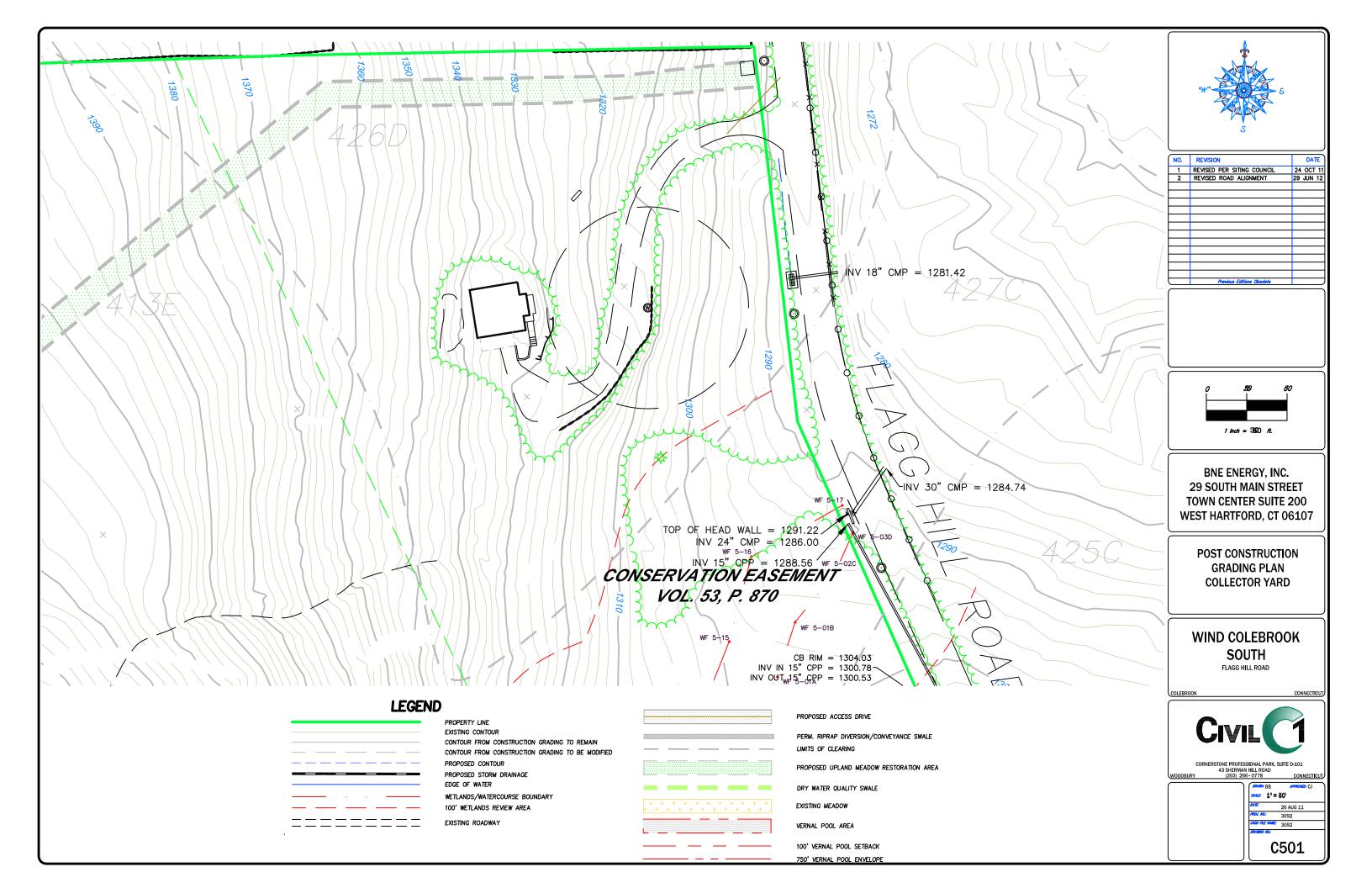
29 SOUTH MAIN STREET **TOWN CENTER SUITE 200** WEST HARTFORD, CT 06107

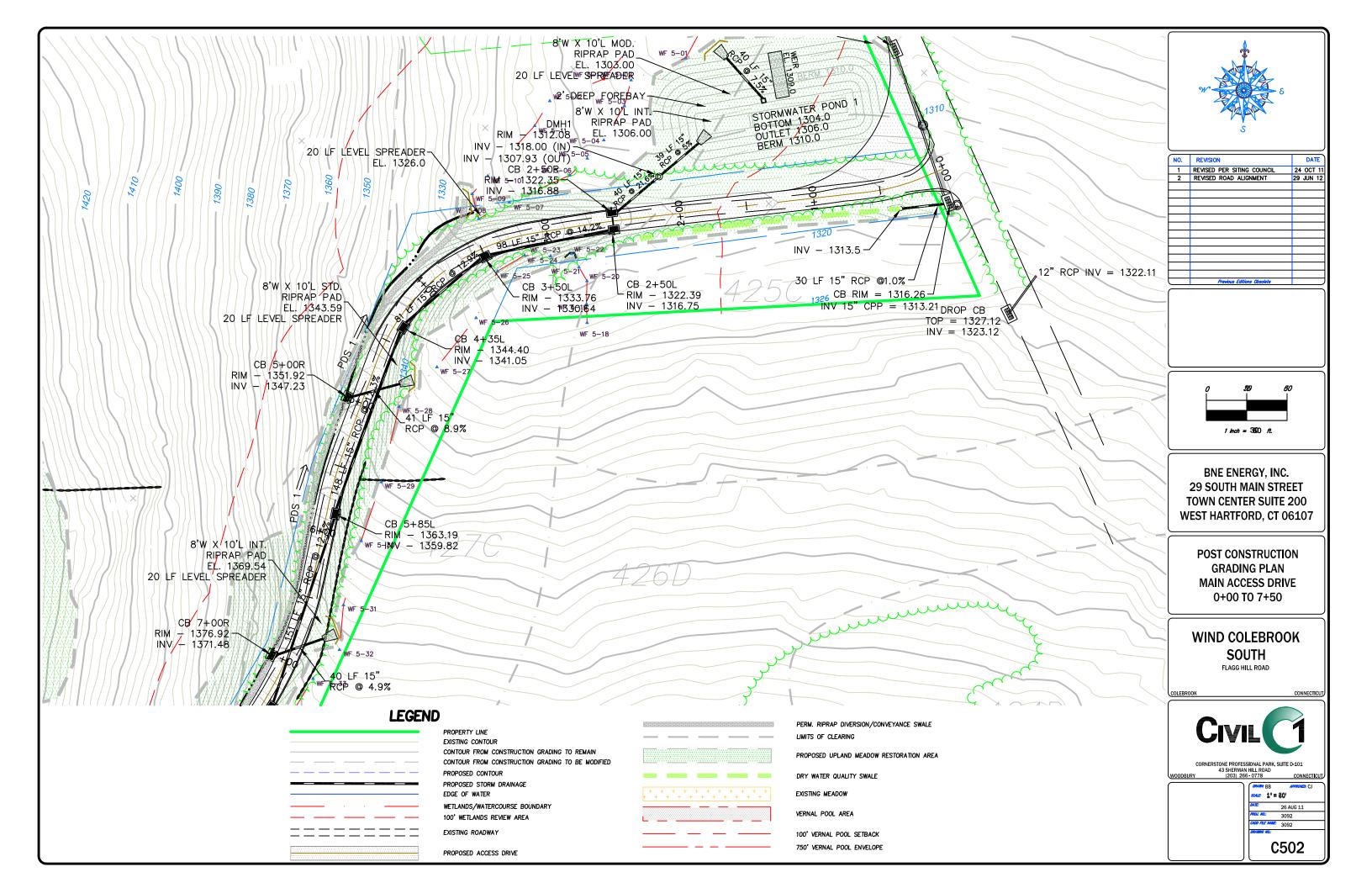
> POST CONSTRUCTION **GRADING PLAN**

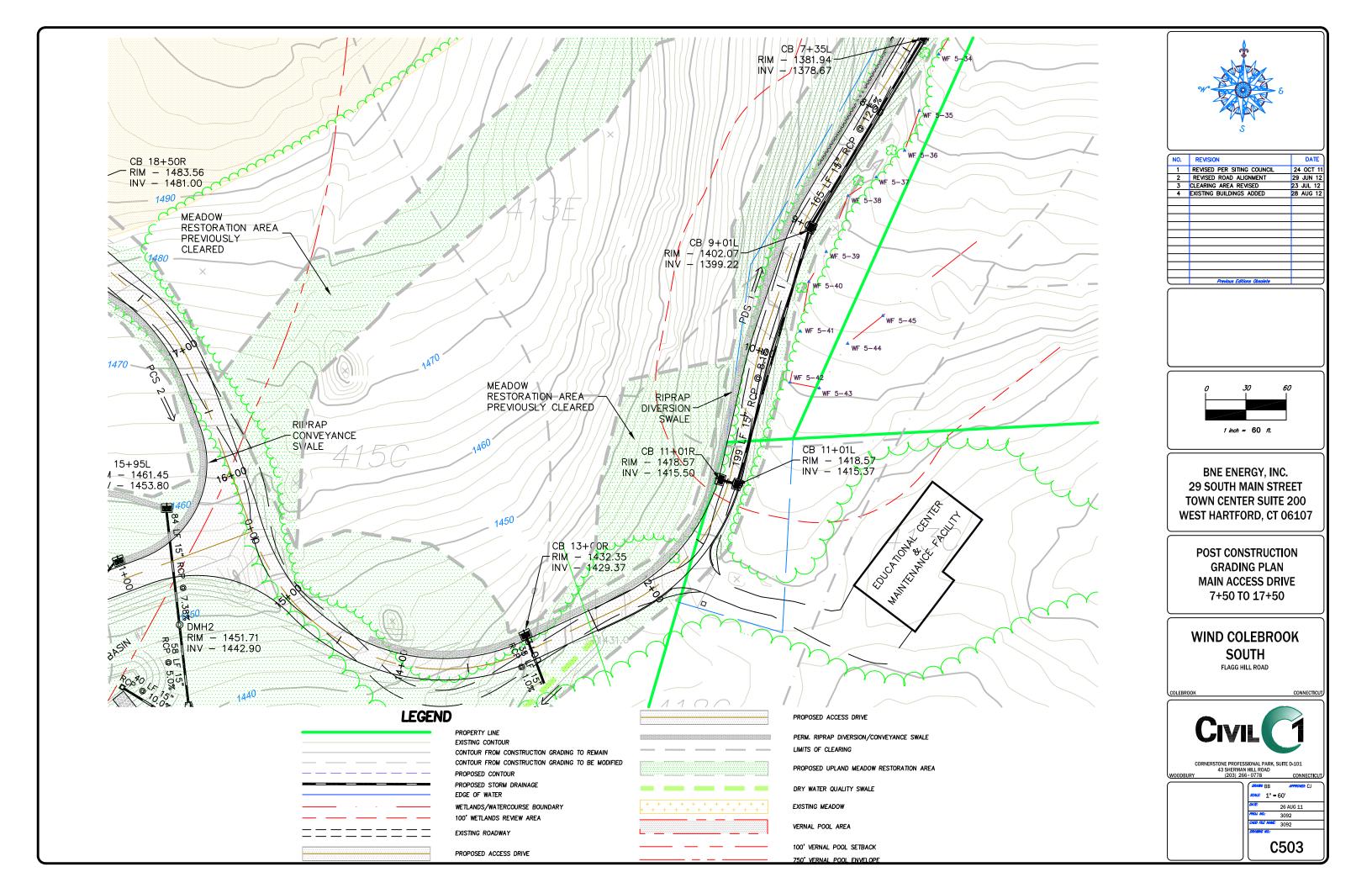
#### WIND COLEBROOK SOUTH

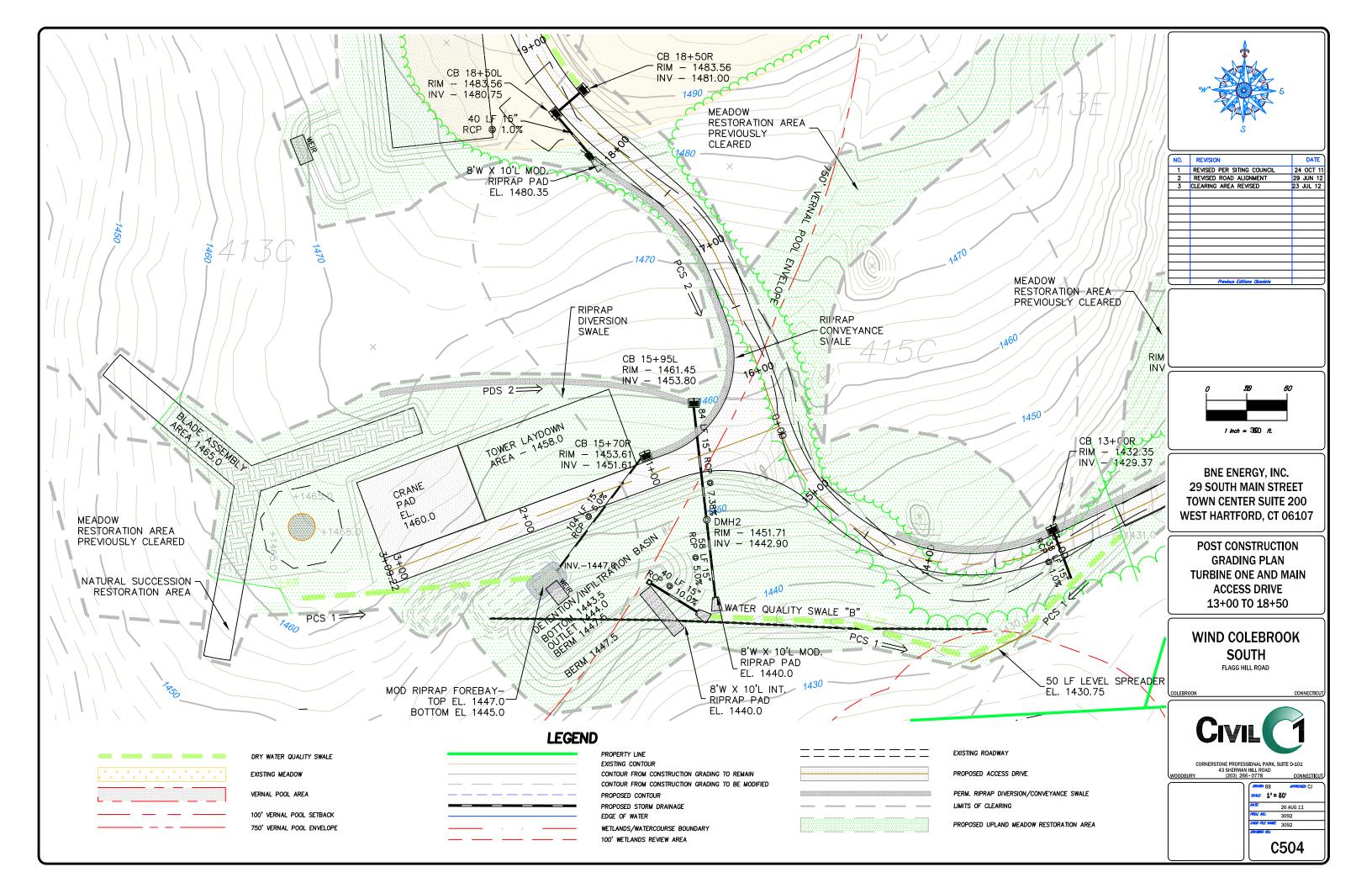
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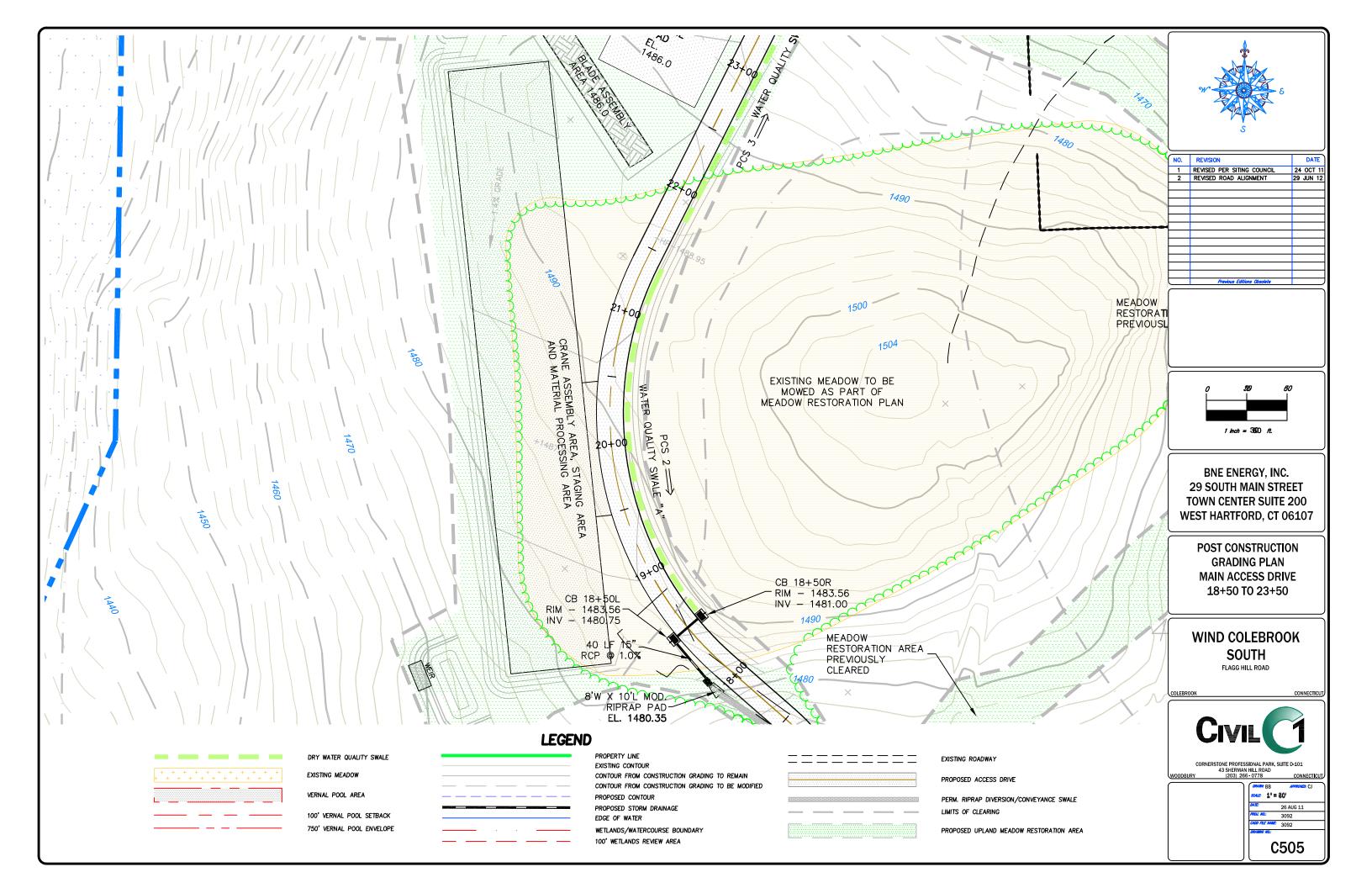
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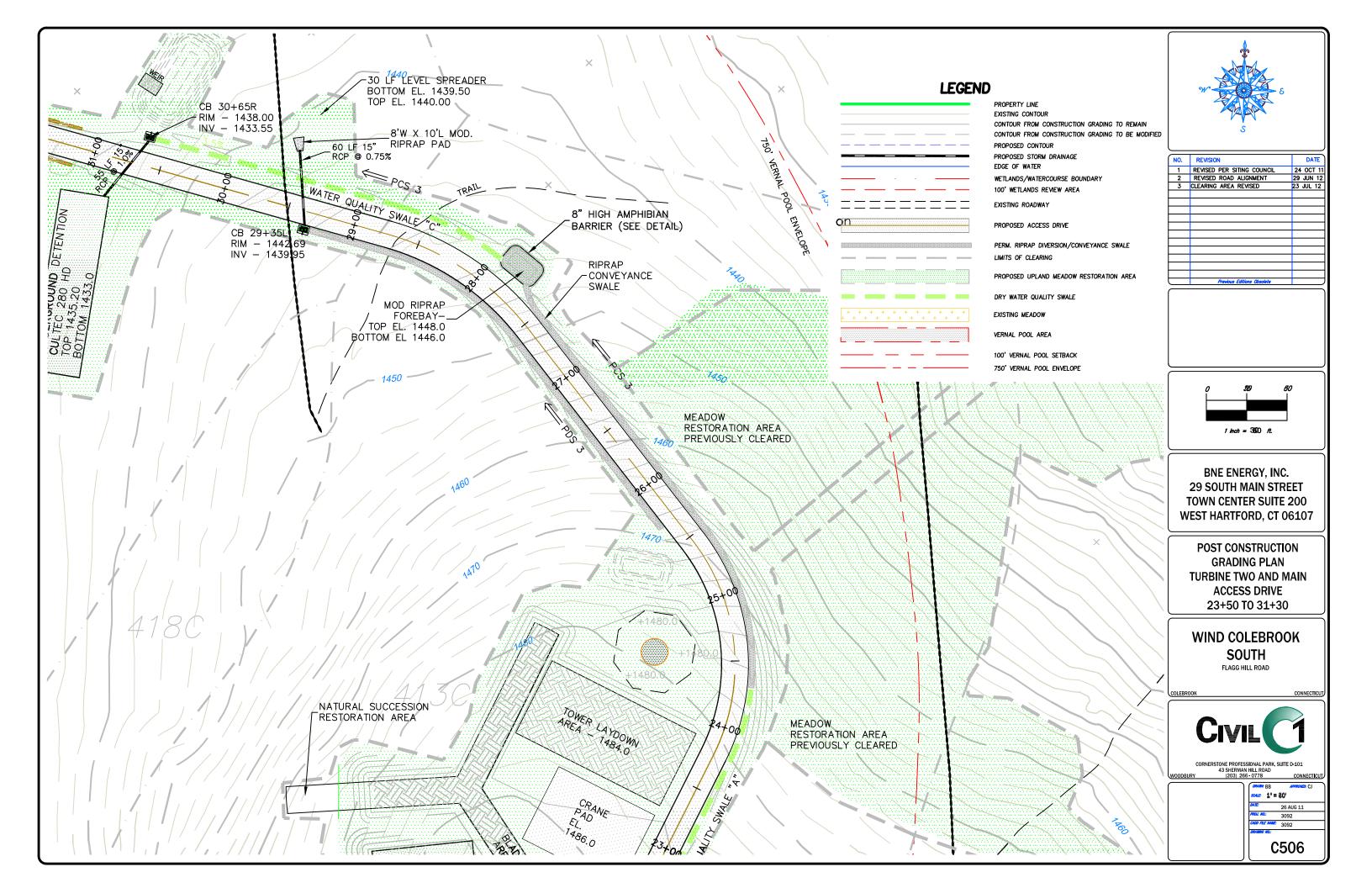


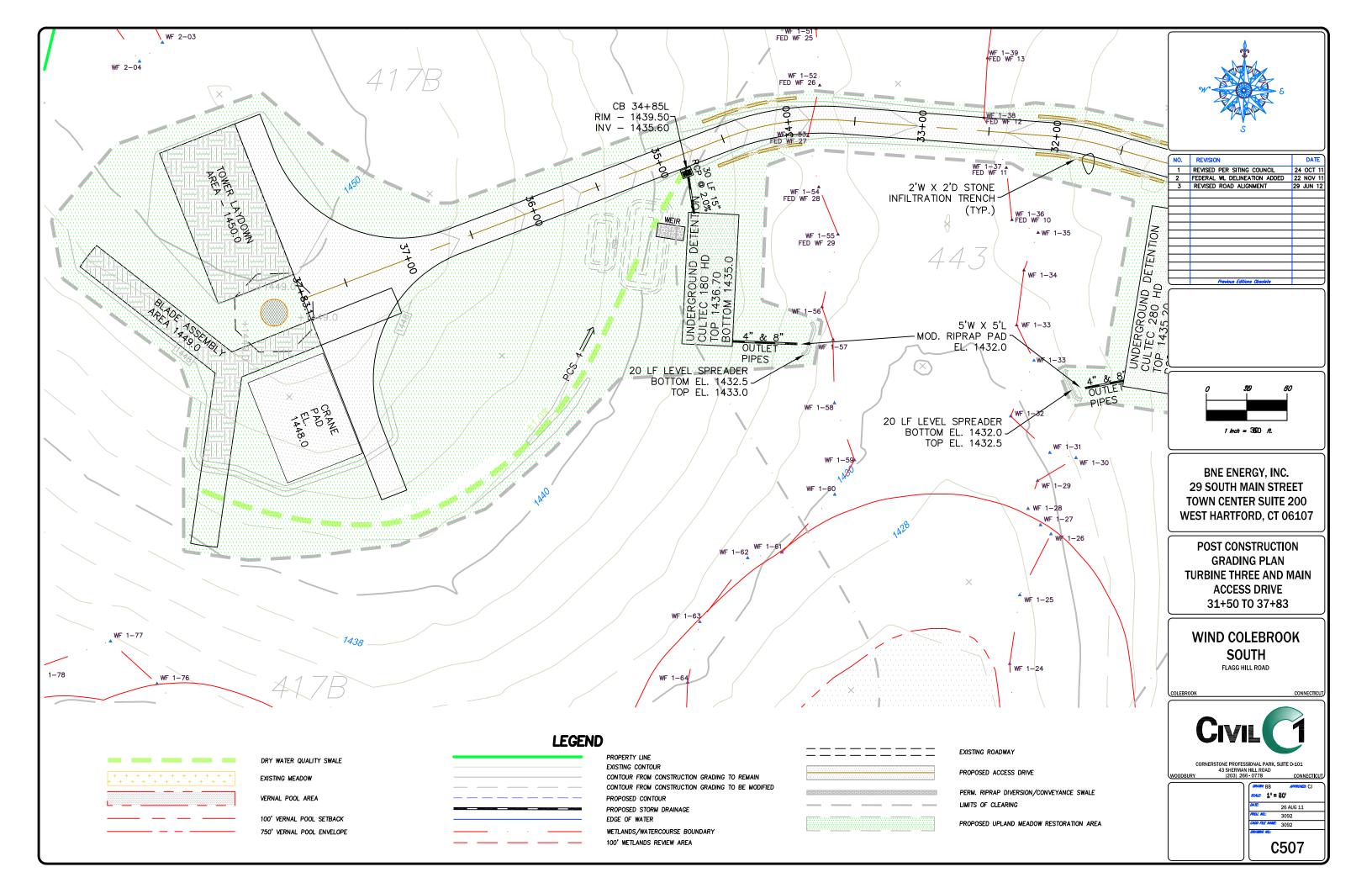












#### CONSTRUCTION SEQUENCE

STEPS TO BE TAKEN TO PREVENT THE SILTING OF THE WETLANDS DURING CONSTRUCTION OF THE ACCESS DRIVE AND LAYDOWN AREAS FOR THE WIND COLEBROOK SOUTH PROJECT, FLAGG HILL ROAD, COLEBROOK, CT.

THE SEQUENCE OF CONSTRUCTION WILL BE AS FOLLOWS:

Field stakeout the limits of all construction activities

Clear all vegetation within the construction area from the main access drive Sta. 0+00 to 31+83, turbine 1 access drive Sta. 0+00 to 3+09 and from all turbine laydown and assembly areas. All trees/shrubs less than 6" in diameter shall be chipped. Install silt fence, hay bales and other perimeter siltation controls as shown on the erosion and sediment control plans prior to

Remove stumps from the the main access drive from station 0+00 to 16+50, the turbine 1 access drive and the turbine 1 laydown and assembly area. Stumps shall be removed from the site. Stumps are not to be buried.

Strip topsoil material and stockpile prior to rough grading of roadways, turbine laydown and assembly areas. Stockpile material at locations shown on the plans. Ensure adequate erosion control measures are in place around stockpile areas.

Rough grade the main access drive from station 0+00 to 16+50, the turbine 1 access drive and the turbine 1 laydown and assembly area. The cuts and fills will be made and material processed on site as necessary. All finished slopes loamed, seeded and mulched unless specified to be finished with riprap.

Construct temporary sediment traps 1 & 2. Install storm drainage from Station 0+00 to 16+50 and the storm drainage in the turbine 1 access drive. Install all temporary and permanent water diversions to keep clean water away from construction areas and divert sediment laiden water toward temporary sediments traps and staked haybale barries.

Temporary diversion ditches with haybales may need to be installed to control lateral runoff along both sides of the proposed road prior to importing processed gravel.

Place gravel on drive, compact in 3-8" lifts per detail on proposed drives and crane pad #1. Pave driveway from station 0+00 to 12+50.

Remove stumps from the area of the proposed access drive from Station 16+50 to 38+13, the crane assembly area, turbine 2 location, and turbine 3 location. Stumps shall be removed from the site. Stumps are not to be buried.

Water bars, havbale traps and silt fence will be used to control erosion during rough grading of access drive as shown.

Strip topsoil material and stockpile prior to rough grading of roadway. Stockpile material at locations shown on the plans. Ensure adequate erosion control measures are in place around stockpile areas.

Rough grade access drive to station proposed access drive from Station 16+50 to 38+13, the crane assembly area, turbine 2 location, and turbine 3 location. Install Seepage Envelope at wetlands crossing per detail.

Install drainage and construct TSTs 3-5. The cuts and fills will be made and material processed on site as necessary. All finished slopes loamed, seeded and mulched unless specified to be finished with riprap.

Additional havbales shall be placed across unpayed roads at the end of each work day to prevent sedimentation and soil

Construct riprap swales, stone infiltration trenches and water quality trenches as shown on plans. The swales and water quality trenches need to be protected from sedimentation during construction. If sedimentation occurs they will need to be cleaned or reconstructed as necessary until vegetation has been established.

Provide temporary seeding measures on all exposed soils which were damaged due to construction activities and are not to be permanently restored or are outside of construction traffic zones for a period in access of 30 days.

Seed all disturbed areas. Clean all silt from drainage structures. Remove temporary sediment traps and erosion control measures after site is stabilized with vegetation.

After turbine construction is complete grade site in accordance with the post—construction grading plans and plant the upland meadow restoration areas as shown.

The starting time for the construction is unknown, however the time limit for the construction of the drive should be limited to 180 days.

#### RESPONSIBILITY FOR THE PLAN

Whenever sedimentation is caused by stripping vegetation and/or grading, it shall be the responsibility of the person, corporation or other entity having responsibility to remove sedimentation from all lower properties, drainage systems and watercourses and to repair any damage at their expense as quickly as possible.

All control measures will be maintained in effective condition throughout the construction period. Surface inlets shall be kept open and free of sediment and debris. The system shall be checked after every major storm and sediment shall be disposed of at an approved location consistent with the plan.

It shall be the responsibility of any person, corporation or other entity engagina in any act on or near any stream, watercourse or swale or upon the flood plain or right—of—way thereof to maintain as nearly as possible in its present state that same stream, watercourse, swale, flood plain or right—of—way for the duration of the activity and to return it to its original or equal condition after such activity

No person, corporation or other entity shall block, impede the flow of, alter, construct any structure or deposit any material or thing or commit any act which affects normal or flood flow in any communal stream or watercourse without having obtained prior approval from the Town.

#### SEEDING AND PLANTING REQUIREMENTS

#### Seedbed Preparation

Fine grade and roke surface to remove stones larger than 2° in diameter. Install needed erosion control devices such as surface water diversions. Grade stabilization structures, sediment basins or drainage channels to maintain grassed areas. Apply limestone at a rate of 2 tons/Ac. or 90 lbs/1000 SF unless otherwise required according to soil test results. Apply fertilizers with 10–10–10 at a rate of 300 lbs./Ac. or 77.5 lbs/1000 SF. At least 50% of the nitrogen shall be from organic sources. Work lime and fertilizer into soil uniformity to a depth of 4" with a whisk, springtooth harrow or other suitable equipment following the contour lines.

#### Seed Application

Seed Application
Apply gross mixtures at rates specified by hand, cyclone seeder or hydroseeder.
Increase seed mixture by 10% if hydroseeder is used. Lightly drag or roll the
seeded surface to cover seed. Seeding for selected fine grasses should be done
between April 1 and June 1 or between August 15 and October 15. If seeding
cannot be done during these times, repeat mulching procedure below until seeding
can take place or seed with a quick germinating seed mixture to stabilize slopes.
A quick germinating seed mixture (Domestic Rye) can be applied between June 15
through August 15 as approved by the Architect or Engineer.

Mulching Immediately following seeding, mulch the seeded surface with straw, hay or wood fiber at a rate of 1.5 to 2 tons/Ac. except as otherwise specified elsewhere. Mulches should be free of weeds and coarse matter. Spread mulch by hand or mulch Muiches should be tree or weeds and coarse matter. Spread muich by hand or multiplication or multiplication of the solid surface with track machine or disk harrow set straight up. Mulch material should be "tucked" approximately 2— 3" into the soil surface. Chemical mulch binders or netting, in combination with the straw, hay or wood fibers, will be used where difficult slopes do not allow harrowing by machines.

#### Grass Seed Mixtures

SS Settle MIXURES
Temporary Covers
Perennial ryegrass
Annual ryegrass
20 lbs/Ac.
Canada Bluegrass
20 lbs/Ac.
Permanent Covers
Creeping Red Fescue
40 lbs/Ac.
Canada Bluegrass
20 lbs/Ac.

#### WETLAND REGULATED ACTIVITY

Wetlands Impacts (Federal Wetlands): Crossing at Station 33+00 - 4.250 sf Total Activity in Wetlands - 4.250 sf

<u>Wetlands Impacts Total- (State & Federal Wetlands):</u>
Crossing at Station 33+00 - 4,250 sf
Driveway Improvements Station 3+00 to 3+50 - 360 sf

Total Activity in Wetlands - 4.610 sf

\*TEMPORARY SEDIMENT TRAPS & DEWATERING BASINS WILL BE SURROUNDED TO THE MAXIMUM EXTENT PRACTICAL WITH SILT FENCE TO EXCLUDE MIGRATING AMPHIBIANS AND AVOID THESE BASINS BECOMING DECOY POOLS.

\*SYNCOPATED SILT FENCING WILL BE EMPLOYED WITHIN 750' OF THE VERNAL POOLS TO FACILITATE MOVEMENT OF WETLAND-DEPENDENT AMPHIBIANS TO AND FROM THESE VERNAL POOLS DURING CONSTRUCTION.

## RESPONSIBILITY FOR EROSION CONTROL PLAN

THE PARTY RESPONSIBLE FOR THE IMPLEMENTATION AND OVERSIGHT OF THE EROSION CONTROL PLAN SHALL BE BNE ENERGY, INC. TOWN CENTER, SUITE 200 WEST HARTFORD, CT 06107

#### UPLAND RESTORATION AND THIRD PARTY MONITORING NARRATIVE

Wind Colebrook South - Upland Restoration Plan

Disturbed upland areas will be restored following construction with New England Conservation/Wildlife Mix, a native herbaceous seed mixture that will form a permanent, maintenance free cover of grasses, forbs, wildflowers and legumes. This seed mixture will provide erosion control and wildlife habitat value. Areas that will not be subject to annual mowing will revert to forest through the natural process of succession.

Upland Restoration Plan Construction Sequence and Planting Schedule

- 1. Prior to all work, erosion control barriers will be installed as detailed on the Erosion
- 2. Where adequate topsoil (±6 inches) does not exist, disturbed areas shall be backfilled to a minimum depth of 6 inches with clean topsoil. Once final topsoil is in place, these areas will be planted with New England Conservation/Wallife Mix after the completion of final grading. The seed mix will be applied at a rate of 1 lb/1.750 square feet. Soil conditioning activities, including raking, will be combined with the seed application process.
- 3. Where 2:1 slopes are utilized for final grading, or in areas specified on the plan sheets, biodegradable erosion control matting will be installed over the seed mixture to promote establishment of vegetation and aid in stabilization. The contractor will use "SC2" erosion control matting, available at New England Wetland Plants Inc.
- The contractor will be responsible for the careful installation, maintenance (including watering) and establishment of native plant material in these areas.
- 5. The erosion control barriers shall be disassembled following successful stabilization these areas. Sediment collected by these devices will be removed and disposed o in a manner that prevents erosion and transport to a wetland or watercourse.

- 6. Monitoring of revegetated areas will be conducted as follows by a qualified third party inspector. These areas will be monitored the first three growing seasons following establishment. Monitoring reports will be submitted to the Connecticut Siting Council no later than December 15 of each year. The reports will provide details on the three success standards described below. In the event that remediation measures are required, recommendations will be provided. The first year of monitoring will be the first year that the site has been through a full growing season after completion of construction and planting. For monitoring purposes, a growing season starts no later than May 31.
- 7. Revegetated areas will be assessed using three success standards. Each standard is described below. Success Standard 1: At least 75% of the surface area of these areas should be reestablished with indigenous species within three growing seasons. Success Standard 2: Vegetation should be checked to ensure that no invasive species colonize in these areas. Success Standard 3: Slopes within and adjacent to the revegetated areas are stabilized.
- 8. In the event that remediation measures are recommended, BNE Energy, Inc. will initiate these measures with the assistance of the qualified third party inspector.
- 9. If necessary to control invasive species, herbicide applications will be conducted by a state-licensed individual. If applications are required in proximity to site wetlands, the herbicide RODEO® [glyphosate (53.8% active ingredient)] shall be utilized as it is the only herbicide approved by CTDEP for application in aquatic environments.
- Fertilizers will not be used to promote growth within these areas. The proposed seed mixture contains a variety of native herbaceous species adept at colonizing recently disturbed greas.

Planting Schedule 1: Upland Restoration Areas

Disturbed areas will be planted with New England Conservation/Wildlife Mix (or equivalent) at 1750 sq.ft./lb. or as recommended by manufacturer. This mix

includes the following species: big bluestem (Andropogon gergrdii), fringed brome grass (Bromus ciliates), creeping red fescue (Festuca rubra), Canada wild rye (Elymus Canadensis), Virginia wild rye (Elymus virginicus), switchgrass (Panicur virgatum), deer tongue grass (Panicum clandestinum), little bluestem (Schizachyrium scoparium), Indian grass (Sorghastrum nutans), common milkweed (Asclepias scopularini, initial grass (congression in licens), common initial executions, solvent explaind aster (Aster novae-anglice), partridge pea (Chamaecrista fasciculate), showy tick-trefoli (Desmodium Canadense), grass leaved goldenrod (Euthamia graminifolia), gray goldenrod (Solidago nemoralis).

Wind Colebrook South - Third Party Environmental Inspections

- A qualified third party environmental inspector shall inspect the installation of erosion and sedimentation controls prior to the start of construction activities. A pre-construction meeting shall be held with the third party environmental inspector and general contractor prior to the start of construction.
- 2. The gualified third party environmental inspector will monitor erosion and sedimentation controls throughout the construction period to ensure that controls are properly maintained and any recommendations to remediate falling controls or removal accumulated sediment are implemented by the contro
- 3. The qualified third party environmental inspector shall monitor erosion and sedimentation controls on a weekly basis or within 24 hours of a rainfall event of 0.5 inches or greater.
- 4. Erosion and sedimentation control monitoring reports will be prepared by the third party environmental inspector on a bi-weekly basis and submitted to the Connecticut Siting Council.
- The on-site erosion and sediment controls shall be montiored by a qualified third party environmental inspector to ensure establishment of appropriate environmental safeguards protective of amphiblon and reprtile species.

**EROSION CONTROL NARRATIVE** 

The following general principles shall be maintained as effective means of minimizing erosion and sedimentation during the development process.

Stripping away of vegetation, regrading or other development shall be done in

Grading and development plans shall preserve important natural features, keep cut and fill operations to a minimum, and insure conformity with topography so at correcte the least erosion potential and adequately handle the volume and velocity of surface water runoff.

Whenever feasible, natural vegetation shall be retained, protected and supplemented wherever indicated on the site development plan.

The undisturbed area and the duration of exposure shall be kept to a practical minimum

Disturbed soils shall be stabilized as quickly as possible

Temporary vegetation and/or mulching shall be used to protect exposed critical areas during development when expected to be exposed in excess of 30 days

The permanent (final) vegetation and mechanical erosion control measures shall be installed as soon as practical during construction.

ent in the runoff water shall be trapped until the disturbed areas is stabilized by the use of debris basins, sediment basins, silt traps or similar

Concentration of surface runoff shall be only permitted by piping and/or through

Excavation and Fills --

Slopes created by cuts or fills shall not be steeper than 1.5:1 and shall be restabilized by temporary or permanent measures, as required during the development process and shown on the site plans.

Adequate provisions shall be made to prevent surface water from damaging the cut face of excavations or the sloping surfaces of fills.

Cut and fills shall not endanger adjoining property.

All fills shall be compacted to provide stability of material and to prevent undesirable settlement. The fill shall be spread in a series of layers each not exceeding twelve (12) inches in thickness and shall be compacted by a sheep roller or other approved method after each layer is spread.

regulated flood plain areas, unless permitted by license or permit from authority having jurisdiction in accordance with approved site plans.

Fills placed adjacent to natural watercourses, constructed channels or flood plains shall have suitable protection against erosion during periods of flooding.

Grading shall not be done in such a way as to divert water onto the property of

During grading operations, necessary measures for dust control shall be

Sedimentation and erosion control shall be implemented in accordance with the Guidelines for Soil Erosion and Sediment Control (2002) — State of Connecticut DEP Bulletin 34.

The following general specifications will also be adhered to:

Land disturbance will be kept to a minimum. Restabilization will be scheduled

\*TEMPORARY SEDIMENT TRAPS WILL BE SURROUNDED TO THE MAXIMUM EXTENT PRACTICAL WITH SILT FENCE TO EXCLUDE MIGRATING AMPHIBIANS AND AVOID THESE BASINS BECOMING DECOY POOLS.

Haybale filters will be installed at all culvert outlets and along the toe of

Culvert discharge areas will be protected with riprap channels. Energy dissipaters will be provided as necessary.

Catch basins will be protected with haybale filters throughout the construction period and until all disturbed areas are thoroughly stabilized.

All erosion and sediment control measures will be constructed in accordance with the standards and specifications of the Guidelines for Soil Erosion and Sediment Control (2002) — State of Connecticut DEP Bulletin 34.

\*SYNCOPATED SILT FENCING WILL BE EMPLOYED WITHIN 750' OF THE VERNAL POOLS TO FACILITATE MOVEMENT OF WETLAND-DEPENDENT AMPHIBIANS TO AND FROM THESE VERNAL POOLS DURING CONSTRUCTION.

Erosion and sediment control measures will be installed prior to construction

All control measures will be maintained in effective condition throughout the construction period.

Additional control measures will be installed during construction if necessary

All erosion control measures shall be inspected weekly and within 24 hours of a rainfall event of 0.5 inches or greater.

### **EARTHWORK QUANTITY ESTIMATE**

TOTAL CUT - 14,950 C.Y. TOTAL FILL - 23,250 C.Y.

COMMON CLEAN FILL REQUIRED (TOPSOIL AND SUBSOIL) - 14,450 C.Y.

RIPRAP TO BE PROCESSED FROM ON-SITE MATERIAL - 500 C.Y.

PROCESS GRAVEL, ASPHALT AND STONE TO BE IMPORTED - 8,300 C.Y.

NOTE: ALL EXCAVATED (CUT) MATERIAL TO BE REUSED ON-SITE. OVERALL SITE DISTURBANCE ASSOCIATED WITH THE PROPOSED IMPROVEMENTS - 16.07 ACRES

23 JUL 12

1 CLEARING AREA REVISED

BNE ENERGY. INC. 29 SOUTH MAIN STREET **TOWN CENTER SUITE 200** WEST HARTFORD, CT 06107

EROSION CONTROL NARRATIVE AND CONSTRUCTION SEQUENCE

#### WIND COLEBROOK SOUTH

FLAGG HILL ROAD

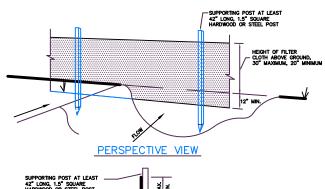
COLEBROOK

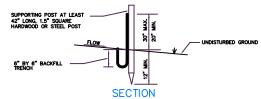
CONNECTICUT



CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
(203) 266 - 0778 CONI WOODBURY CONNECTICUT

N.T.S 26 AUG 11 3092 3092 C600



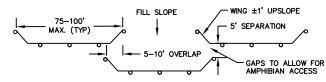


#### CONSTRUCTION NOTES FOR SILT FENCE

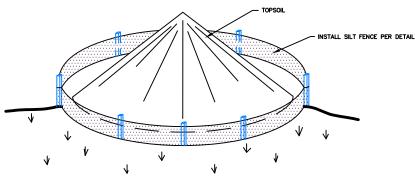
3. STAPLE OR SECURE THE GEOTEXTILE TO THE SUPPORT POSTS PER MANUFACTURER'S INSTRUCTIONS SUCH THAT AT LEAST 6 INCHES OF GEOTEXTILE LIES WITHIN THE TRENCH.

4. BACKFILL THE TRENCH WITH TAMPED SOIL OR AGGREGATE OVER THE GEOTEXTILE.

#### SILT FENCE DETAIL



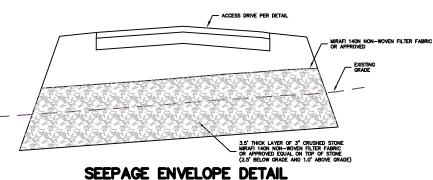
#### SYNCOPATED SILT FENCE INSTALLATION



STOCKPILE MANAGEMENT PER 2002 CT GUIDELINES FOR E & S CONTROL:

- 1. LOCATE STOCKPILE SO THAT NATURAL DRAINAGE IS NOT OBSTRUCTED.
  2. DIVERT RUNOFF WATER AWAY FROM OR AROUND THE STOCKPILE.
  3. INSTALL A GEDTEXTILE SLIT FERCE OR HAY BALE BARRIER AROUND THE STOCKPILE AREA APPROXIMATELY 10 FEET FROM PROPOSED TOE OF THE SLOPE.
  4. THE SIDE SLOPES OF STOCKPILED MATERIAL SHOULD BE NO STEEPER THAN 2:1.
  5. STOCKPILES THAT ARE NOT TO BE USED WITHIN 30 DAYS NEED TO BE SEEDED AND MULCHED IMMEDIATELY AFTER FORMATION OF THE STOCKPILE.
  6. AFTER STOCKPILE HAS BEEN REMOVED, THE SITE SHOULD BE GRADED AND PERMANENTLY STABILIZED.

TEMPORARY TOPSOIL STOCKPILE



MOD.

- 1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.

  NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.

  BEGIN AT THE TOP OF THE SLOPE BY MACHORING THE BLANKET IN A 6" (15cm) DEED, 6" (15cm) LEDE, 7" (1
- STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.

  3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE BLANKETS WILL URROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE ALL BLANKETS MUST BE SCUPIELY FASTENED TO SOIL SURFACE BY PLACED STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SOINN IN THE STAPLE PATTERN QUIDE. WHAT USING OPPORTUNAL DOT SYSTEM, "STAPLES/STAKES HOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.

  4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET BLANKET BLANKET BLANKET BLANKET SPLICED DOWN THE SLOPE MUST BE PLACED BED OVER END OWER DANKET.

  5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED BED OVER END OWER DANKET.

  6. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED BED OVER END OWER DANKET.

  7. (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

NOILE: "IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

EROSION CONTROL BLANKETS

100% Straw fiber matrix sewn between two bio-degradable nets.

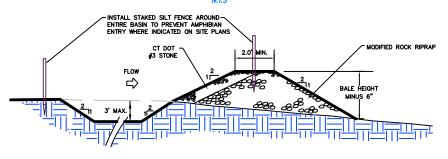
Net: Temporary lightweight bio-degradable (Both sides)

#### **EROSION CONTROL BLANKET**

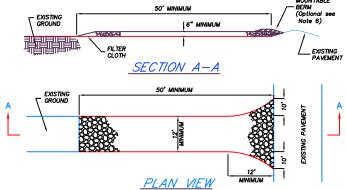
PLACE MODIFIED RIPRAP AT PUMP DISCHARGE LOCATION EXCAVATED AREA INSTALL STAKED SILT FENCE AROUND ENTIRE BASIN TO PREVENT AMPHIBIAN ENTRY WHERE INDICATED ON SITE PLANS INSTALL STAKED HAYBALES AROUND BASIN SIZING CALCULATION:

CUBIC FEET OF STORAGE = PUMP DISCHARGE RATE (GPM) X 16
CUBIC FEET OF STORAGE = 100 GPM X 16 = 1,600 CUBIC FEET
BASIN DIMENSIONS - 16\*W 35\*L X 35\*L = 1,800 CUBIC FEET OF STORAGE PROVIDED

#### **DEWATERING SETTLING BASIN**



#### **DEWATERING SETTLING BASIN OUTLET**



- STONE SIZE USE 1" 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

- STONE SIZE USE 1" 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.

  LENGTH AS REQUIRED, BUT NOT LESS THAN 50 FEET.

  THICKNESS NOT LESS THAN SIX (5) INCHES.

  WIDTH 12 FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. 24 FOOT MINIMUM IS SINGLE ENTRANCE TO SITE.

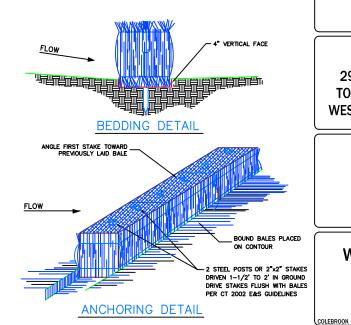
  FILTER CLOTH TO BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.

  SURFACE WATER ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERN WITH 5:1 SLOPES WILL BE PERMITTED.

  MAINTENANCE THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOWING OF SEDIMENT ONTO PUBLIC RICHTS—OF—WAY. THIS MAY REQUIRE PERIODIC TOP PRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURE USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DRIPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS—OF—WAY WUST BE REMOVED MINEDITELY.

  WASHING WHELS SHALL BE CLEANED TO REMOVE SEDIMENT FROOT O ENTRANCE ONTO PUBLIC RICHTS—OF—WAY, WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.

## STABILIZED CONSTRUCTION ENTRANCE



#### NOTES:

- 1. BALES SHALL BE EITHER STRAW OR HAY.
- 2. BALES SHALL BE PLACED AT THE TOE OF SLOPE OR ON THE CONTOUR AND IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
- 3. EACH BALE SHALL BE EMBEDDED IN THE SOIL A MINIMUM OF 4 INCHES, AND PLACED SO THE BINDINGS ARE HORIZONTAL.
- 4. BALES SHALL BE SECURELY ANCHORED IN PLACE BY EITHER TWO STAKES OR RE-BARS DRIVEN THROUGH THE BALE. THE FIRST STAKE IN EACH BALE SHALL BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE AT AN ANGLE TO FORCE THE BALES TOGETHER. STAKES SHALL BE DRIVEN FLUSH WITH THE BALE.
- 5. INSPECTION SHALL BE FREQUENT, AND REPAIR AND/OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDEI TO MAINTAIN EFFECTIVENESS OF INSTALLATION.
- 6. BALES SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

#### STAKED HAY BALE BARRIER

BNE ENERGY, INC. 29 SOUTH MAIN STREET **TOWN CENTER SUITE 200** WEST HARTFORD, CT 06107

NO. REVISION

1 REVISED PER SITING COUNCIL

24 OCT 11

**DETAILS** 

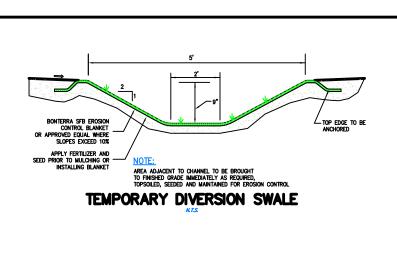
WIND COLEBROOK SOUTH

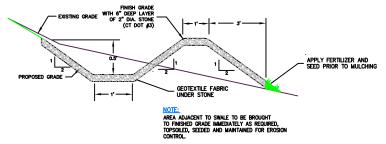
FLAGG HILL ROAD

CORNERSTONE PROFESSIONAL PARK, SUITE D-101 43 SHERMAN HILL ROAD (203) 266-0778 CONN

SCALE N.T.S. 26 AUG 11 3092 3092 ALE NAME C601

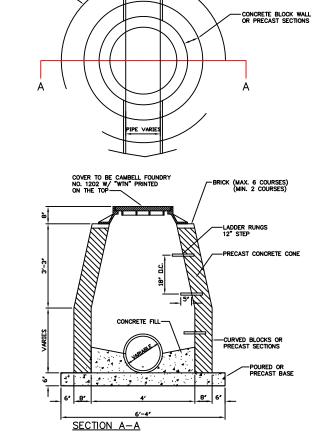
CONNECTICUT



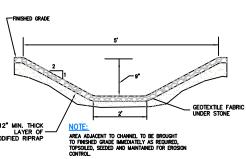


#### LEVEL SPREADER DETAIL

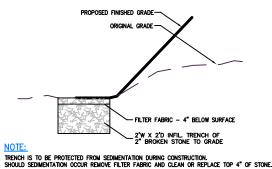
CURVED EDGE OF CONCRETE FOOTIN



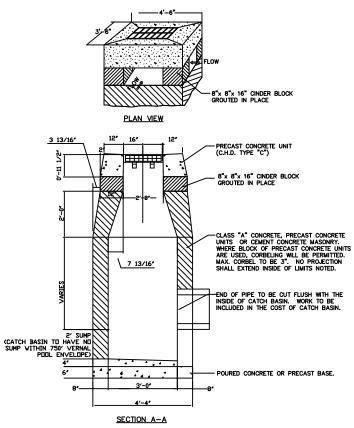




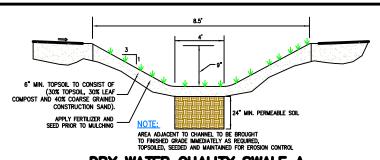
#### RIPRAP DIVERSION/CONVEYANCE SWALE



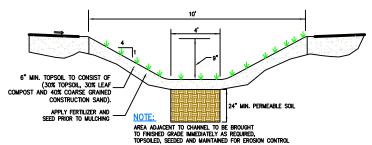
## STONE INFILTRATION TRENCH



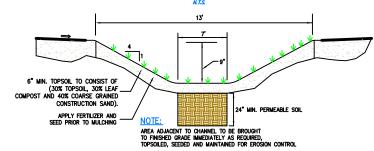
STANDARD TYPE "CL" CATCH BASIN



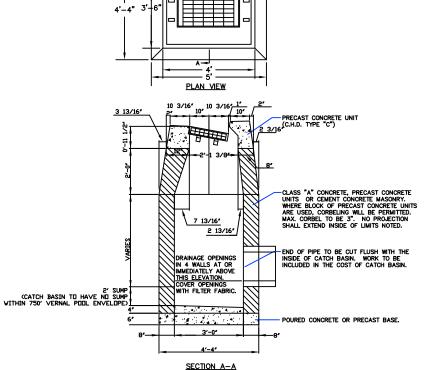
#### DRY WATER QUALITY SWALE A



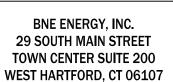
#### DRY WATER QUALITY SWALE B



## DRY WATER QUALITY SWALE C



STANDARD TYPE "C" CATCH BASIN



NO. REVISION

**DETAILS** 

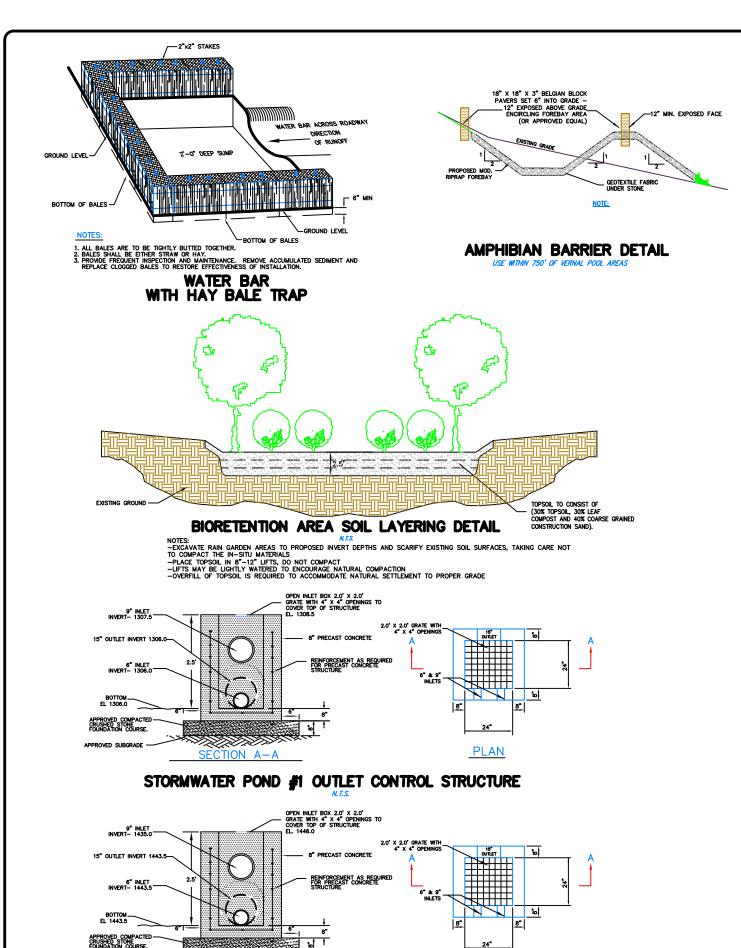
WIND	<b>COLEBROOK</b>
	SOUTH

FLAGG HILL ROAD

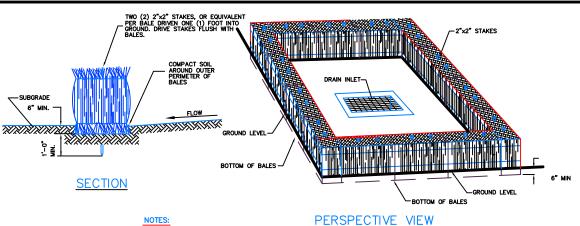


CORNERSTONE PROFESSIONAL PARK, SUITE D-101 43 SHERMAN HILL ROAD Y (203) 266 - 0778 CONN

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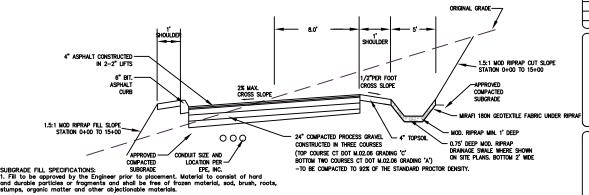


DETENTION/INFILTRATION BASIN #2 OUTLET CONTROL STRUCTURE



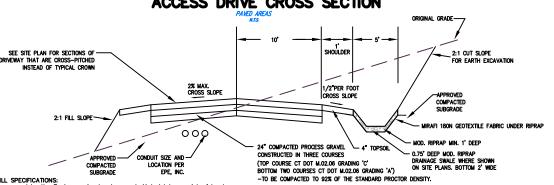
ALL BALES ARE TO BE TIGHTLY BUTTED TOGETHER.
 BALES SHALL BE EITHER STRAW OR HAY.
 PROVIDE FREQUENT INSPECTION AND MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AND REPLACE CLOGGED BALES TO RESTORE EFFECTIVENESS OF INSTALLATION.

#### **BALED FILTER**



Subbase and fill specifications to be confirmed and modified as necessary after site analysis by geotechnical engineer. Access drive design must be able to accommodate a proposed construction vehicles including crawler crane.

#### ACCESS DRIVE CROSS SECTION



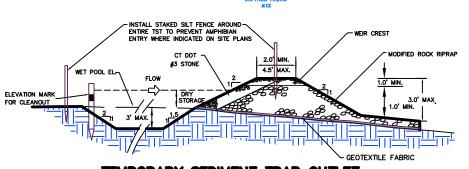
SUBGRADE FILL SPECIFICATIONS:

1. Fill to be approved by the Engineer prior to placement. Material to consist of hard and durable particles or fragments and shall be free of frozen material, sod, brush, roots, stumps, organic matter and other objectionable materials.

Subbase fill material shall be compacted to 90% of the standard proctor density until the required elevation is obtained.

Subbase and fill specifications to be confirmed and modified as necessary after site analysis by geotechnical engineer. Access drive design must be able to accommodate proposed construction vehicles including crawler crane.

#### ACCESS DRIVE CROSS SECTION



BNE ENERGY. INC. 29 SOUTH MAIN STREET **TOWN CENTER SUITE 200** WEST HARTFORD, CT 06107

NO. REVISION

1 REVISED PER ENV. CONSULTANT

DATE

28 AUG 12

**DETAILS** 

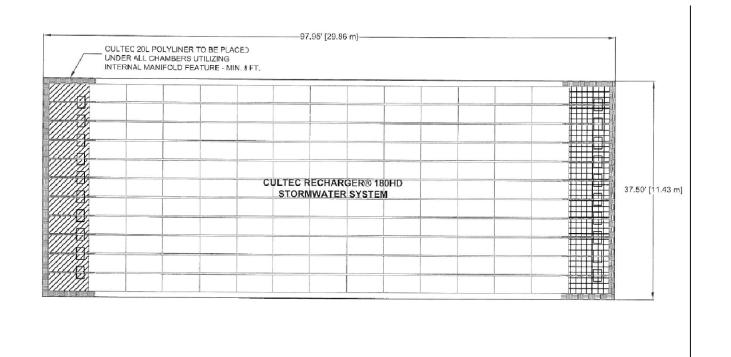
#### WIND COLEBROOK SOUTH

FLAGG HILL ROAD

CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
Y (203) 266 - 0778 CONF

SOME N.T.S. 26 AUG 11 3092 3092 C603

TEMPORARY SEDIMENT TRAP OUTLET



MATERIALS LIST				
RECHARGER 1803HD STARTER	11	PIECES		
RECHARGER 1801HD INTERMEDIATE	163	PIECES		
RECHARGER 1806HD END	31	PIECES		
HVLV FC-24 FEED CONNECTORS	20	Plēces		
CULTEC No. 410 FILTER FABRIC 7.5'× 300	4	ROULS		
CULTEC No. 20L POLYETHYLENE LINER	150	LINEAL FEET		
1 1/2 - 2 INCH DIAMETER BROKEN STONE	234	CUBIC YARDS		

CULTEC RECHARGER® 180HD LEGEND

RECHARGER 1808HD STARTER

RECHARGER 1801HD INTERMEDIATE

RECHARGER 180EHD END

HVLV FC-24 FEED CONNECTORS

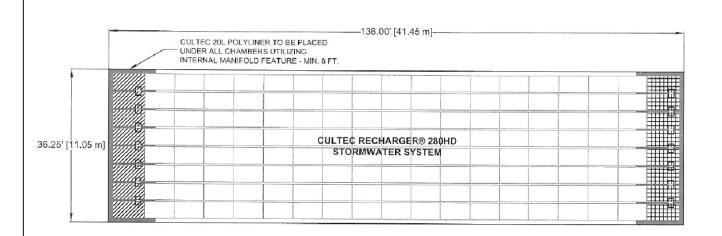
CULTEC NO. 20L POLYETHYLENE LINER

## CULTEC STORMWATER MANAGEMENT SYSTEM STORAGE REQUIRED: 6,000 c.f.

STORAGE PROVIDED: 6,164 c.f.

\*INSTALLED USING TYPICAL STONE REQUIREMENTS
OF 6 NICHES AROVE AND BELOW CHAMPERS AND A

OF 6 INCHES ABOVE AND BELOW CHAMBERS AND A 1 FT. BORDER SURROUNDING



MATERIALSLIST				
RECHARGER 200SHD STARTER	8	PIECES		
RECHARGER 260IND INTERMEDIATE	138	PIECES		
RECHARGER 200EHD END	. 8	PIECES		
HVLV FC-24 FEED COMNECTORS	14	PIECES		
CULTED No. 450 FILTER FABRIC 7,5 x 300°	5	ROLLS		
CULTEC No. 20L POLYETHYLENE LINER	145	LINEAL FEET		
1 1/2 - 2 INCH DIAMETER BROXEN STONE	344	CUBIC YARDS		
VOLUME OF EXCAVATION	708	CUBIC YARDS		

CULTEC RECHARGER® 280HD LEGEND



HVLV FC-24 FEED CONNECTORS

CULTEC NO. 20L POLYETHYLENE LINER

CULTEC STORVWATER MANAGEMENT SYSTEM
STORAGE REQUIRED: 10,000 c.f.
STORAGE PROVIDED: 10,240 c.f.

'INSTALLED USING TYPICAL STONE REQUIREMENTS OF 6 INCHES AEOVE AND BELOW CHAMBERS AND A 1 FT. BORDER SURROUNDING BNE ENERGY, INC. 29 SOUTH MAIN STREET TOWN CENTER SUITE 200 WEST HARTFORD, CT 06107

NO. REVISION

DETAILS CULTEC DETENTION BEDS

#### WIND COLEBROOK SOUTH

FLAGG HILL ROAD

CONNECTICUT



CORNERSTONE PROFESSIONAL PARK, SUITE D-101
43 SHERMAN HILL ROAD
DBURY (203) 266-0778 CONNI

